EXPLORING STRATEGIC INFORMATION USE IN ENROLLMENT MANAGEMENT AT FOUR-YEAR INSTITUTIONS OF HIGHER EDUCATION

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Dedication

This dissertation study is dedicated to my parents:
Avram C. Herman (1950 - 2006) and Mollie S. Herman

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Adam J. Herman

EXPLORING STRATEGIC INFORMATION USE IN ENROLLMENT MANAGEMENT AT FOUR-YEAR INSTITUTIONS OF HIGHER EDUCATION

Institutions of higher education (IHEs) engage in practices that mirror the operations of businesses, including execution of ongoing strategic management initiatives, particularly in marketing and admissions. IHEs benefit from building profiles of target customers (i.e., prospective students) and using these data to enhance recruitment campaigns. In addition to prospect-specific information, IHEs can utilize data in the external environment related to competitor institutions, market insights and knowledge, benchmarks, and other external data. Further, ongoing organizational learning activities enable processes and routines to be improved over time, with changes to contemporary practices building on, and incorporating learning from, knowledge gained from past practices.

This study investigated IHEs' acquisition of external information, communication of information within the institution, and use of knowledge gained from enhanced organizational communication for the purposes of gaining or sustaining a competitive advantage. This study contributes to literature tying key strategic management frameworks to recruitment efforts in higher education, focusing on absorptive capacity and strategic learning capability in marketing and admissions. Absorptive Capacity (ACAP) allows institutions to take advantage of market information when it is assimilated across the organization. Strategic Learning Capability (SLC) describes an organization's ability to adjust organizational strategy based on acquired strategic information. Explored together in this study, these two capabilities encompass how external information is identified, shared, and utilized. In addition, the study explores the capacity of

marketing and admissions units within IHEs to adapt practices in response to information acquired through Strategic Learning Capability.

The overarching research question for this survey-based exploratory study is: *To what extent are ACAP and SLC behaviors associated with improved outcomes in recruitment and enrollment at four-year institutions?*

The findings indicate that there are statistically significant but generally modest associations between ACAP/SLC and selected outcome measures in marketing and admissions.

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CHAPTER ONE: INTRODUCTION

Institutions of higher education (IHE), particularly admissions and marketing offices, have experienced an increasing shift toward leveraging higher education-applicable practices that mirror the operations of large corporations, including the use of customized customer relationship management (CRM) software tools and execution of ongoing quality control and strategic management initiatives. Higher education institutions can benefit from building profiles of target customers (i.e., prospective students) and using these data to enhance recruitment campaigns, integrating key data from the marketplace, including prospect-specific data and, where applicable, data on competitor institutions, market insights and knowledge, benchmarks, and key data that exist external to the IHE. Further, ongoing organizational learning activities enable processes and routines to be improved over time, with changes to contemporary practices building on, and incorporating learning from, knowledge gained from past practices (Levitt & March, 1988).

Institutions of higher education have gained greater capabilities in the area of customer relationship management, improving mechanisms and processes used for communicating with prospective students and their families. Even with these improvements, new ways of doing business continue to be adopted. This study focuses on strategic information use and organizational learning capabilities across the silos in IHEs that are part of the entire student recruitment value chain. Institutions can achieve performance gains with greater insights on how to communicate valuable information more effectively within the institution, and to better leverage knowledge gained from enhanced organizational communication.

There is a gap in the literature tying key strategic management frameworks to marketing and recruitment efforts in higher education. This study will focus on filling this gap, by exploring absorptive capacity (ACAP) and strategic learning capability (SLC) within higher education admissions and marketing. Absorptive capacity allows institutions to take advantage of market information particularly well when the information is assimilated across the organization and organizational subunits (Cohen & Levinthal, 1990). Strategic learning capability describes an organization's "proficiency at deriving knowledge from past strategic actions and subsequently leveraging that knowledge to adjust [organizational] strategy" (Anderson, Covin, & Slevin, 2009). Explored together in this study, these two capabilities – absorptive capacity and strategic learning capability – encompass how external information is identified, shared, and leveraged, as well as how capable admissions and marketing organizations are at integrating new information within their organizations.

Strategic Management Within Higher Education Institutions

Higher education is a complex industry, in part because of its historical roots that would indicate that higher education did not start out as an industry at all. A series of institutions opened their doors, to teach subjects considered valuable, primarily to upper-class men. In the 1700s, the University of Virginia allowed its students to study "modern languages, science, and architecture" with an innovative student honor code (Thelin, 2004, p. 51). None of the contemporary language about institutional brand equity or *U.S. News* rankings would have been heard in the 18th century admissions office. Even by the time Harvard raised its tuition 33% (to $400 from $300) in 1928-29, the college "management revolution" had yet to occur (Keller & Keller, 2007, p. 143). The 21st century contemporary strategic enrollment management (SEM)

operation, however, routinely leverages business practices in the service of institutions of higher education.

In writing about the college application and selection process, McDonough (1994) made the following observation about the field of college admissions:

> Major indicators of change within the field of college admissions are that 45 percent of all institutions of higher education engage in formal enrollment management programs, over the last twenty-five years college admissions staffs have grown exponentially, and there is an increased stratification of U.S. colleges and universities. (p. 431)

A significant amount of change, particularly in both traditional SEM areas and other units, includes the increasing use of business practices to:

- create awareness about the university (marketing and branding)
- attract, screen, select, and reject a mix of applicants/prospective customers (admissions)
- price the institution's programs and services in a manner tailored to the student's financial circumstances, attractiveness as an applicant, or other criteria (student financial aid, including merit- and need-based aid)
- help the student select a particular set of core product variations (major selection and academic advising)
- ensure customer satisfaction and continued customer loyalty (retention efforts)
- provide a sound return on investment by assisting with the acquisition of post-college employment (career services).

Colleges and universities also engage in prestige-seeking practices, jockeying to enhance their market position and improve perceptions of their institution (Brewer, Gates, & Goldman, 2002). There also exist questions about who really benefits (or what value exists) from prestige-

seeking activities and attempts to improve an institution's position in rankings and ratings systems. For example, Brennan, Brodnick, and Pinckley (2008) identified two studies in which students reported very low use of college rankings, with only 20% of students able to "recall reading *any* articles or reports that ranked colleges" and a mere 8% of students using rankings as a decision making tool (p. 185).

With increasing recognition that higher education SEM practices are business practices comes a concomitant increase in the value of leveraging business strategy in SEM areas. From a strategic perspective, the units identified can benefit from both high-velocity decision-making capabilities (as described by Eisenhardt, 1989) and the information-sharing behaviors associated with absorptive capacity (Cohen & Levinthal, 1990) to respond to the dynamic higher education market. Below I review several key functional areas that are part of the SEM organization, or aligned with its goals and purposes.

Marketing Functional Area: Building Brand Awareness

College and university marketing areas play a business functional role in creating awareness of the institution, including for potential customers (which includes prospective students, parents, and other constituents), and leveraging known brand management strategies to increase engagement of current and future customers. Regarding the cultivation of strong brands, Campbell (2002) wrote that brands "are an effective way to secure a sustainable competitive advantage." (p. 210). Discussing branding and marketing efforts around luxury products including Jones Soda and BMW's Mini Cooper, Schau, Muñiz, and Arnould (2009) enumerated successful marketing practices to build brand engagement: (1) social networking; (2) impression management; (3) community engagement; and (4) brand use (p. 34). These practices, which help

to successfully sell high-end sodas and luxury cars, are deployed widely in higher education marketing as well, both generally by marketing units, and by admissions offices.

Admissions: Selling the College and Converting Accepted Applicants

Admissions offices serve as the sales apparatus in higher education, using information sharing, customer relationship management, and persuasive customer conversion strategies to attract customers' interest, convert their interest into applications and enrollment deposits, and encourage matriculation. Applications to four-year colleges and universities from traditional prospective students are part of a unique process, with many students expecting to go through the process only once, and to select an institution that will meet their expectations for a four-year college experience and the attainment of a bachelor's degree (Canterbury, 2000). Although the national rates for degree completion are low enough to suggest that – for many students – a "four-year degree" is more aspirational than likely, traditional attendance and completion at a four-year school remains an ideal sought by many applicants (Bahr, 2009; Canterbury, 2000; Clemetsen, Furbeck, & Moore, 2014; NCES, 2013). Competition by top-ranked colleges for the best applicants is fierce, and the staff in college admissions units are well positioned to offer advice to students, while also closing a "sale," converting a prospective student to pay a deposit by the National Decision Day (May 1), and matriculate in the fall. Those who doubt the competition between rival institutions to attract the best students need only observe the increasing arsenal of technological systems employed by admissions offices to track applicant interest, or the 2002 breach of Yale's online applicant notification system by Princeton admissions officials (Arenson, 2002).

Financial Aid and Scholarships: Setting the Price

A 2013 *Forbes* article noted that colleges offering "sales" or "rebates" on tuition feels counterintuitive to many consumers because colleges have "the noble and important mission of educating students and building our nation's future" with distinct aims from organizations selling other high-priced goods, such as cars or engagement rings (Lapovsky, 2013). The financial aid functional area (which, for purposes of this study, also includes the unit that awards institutional and donor-funded scholarships) serves the business purpose of supporting institutional efforts to attract, enroll, and retain students (and their tuition dollars) through the use of a combination of grants, loans, and tuition waivers, sourced from the federal government, private lenders, independent scholarship programs, donor-funded institutional scholarships, state-sponsored scholarships and prepaid college plans, and other financial resources that effectively provide a discount from the tuition price. The reasons a student may be offered financial aid are as varied as the funding sources; qualification for a scholarship may be awarded on the basis of family income or demonstrated need, tied to an effort to provide access and opportunity (e.g., the Pell Grant or another need-based scholarship); high academic ability and likely offers from competitor institutions (such as in the cases of both high-GPA merit award recipients, or high-performing out-of-state students who would pay higher tuition than in-state students, even with a discount, at many public institutions); or specific target demographic characteristics (including students from historically underrepresented populations). In all of these cases, though, the financial aid unit is responsible for developing an aid package that will meet the needs of the student and attract him or her to the institution at a price that the student will be able to afford (or secure appropriate loans to pay). Citing studies conducted by the National Association for College and University Business Officers, Ehrenberg wrote that in fall 2008, the average tuition discount for first-time students at private institutions was 42%, up from 26% in 1990 (Ehrenberg,

2012, p. 194). As state appropriations shrink, public universities also will continue to increase tuition while still recruiting highly desirable students, leading to "greater use of campus-based tuition discounting in public colleges" which may affect the availability of need-based aid (Kinzie et al., 2004, p. 46).

Strategic Management Capabilities in Enrollment Management Functions

Competition in all sectors of business is becoming increasingly knowledge-based, with those organizations that are able to exploit knowledge and information finding themselves best able to engage in competitive strategic positioning (Lane & Lubatkin, 1998, p. 461). At the same time, student satisfaction, student loyalty, and student perception of an institution's reputation constitute key indicators of whether institutions will be able to competitively and effectively attract, enroll, retain, and graduate desirable students (Helgesen, 2008).

As competition for desirable students grows – and as satisfaction, loyalty, and reputation indicators become more accessible to higher education professionals – institutional actors will need to allocate attention to a variety of problems, issues, and challenges to make effective decisions (Ocasio, 1997). In addition, higher education leaders will need to identify pathways for information flow and organizational communication that allow for practice-sharing and knowledge-sharing across the silos of higher education organizations (Lane, Koka, & Pathak, 2006). These information pathways will need to allow information to travel quickly as well, so that strategic decisions can be made in a timely manner, with optimal amounts of information (Eisenhardt, 1989). Senior leaders and line managers in higher education should not limit their focus only to internal issues, as information from outside of individual institutions will be critical to maintain a competitive advantage. Although there is substantial business strategy literature on organizational learning, allocation of attention, and absorptive capacity in large organizations, I

argue that there is a gap in the literature for how these strategies apply within higher education, specifically the strategic enrollment management context.

Purpose of the Study

The purpose of this study is to explore Absorptive Capacity (ACAP) and Strategic Learning Capability (SLC) as capabilities for strategic decision making in the context of higher education admissions and marketing. Specifically, this study investigates the relationship between the presence of ACAP and SLC behaviors in marketing and admissions within IHEs and an institution's ability to improve outcomes related to admissions and enrollment. Outcome measures include yield, incoming average test scores, the racial make-up of the incoming class (as a proxy for diversity), the number of applications received by an institution, the admit rate percentage (number of students admitted out of total applications), and the number of students who ultimately enroll.

Importance of the Study

Although there is significant literature in higher education about strategic planning and organizational behavior, there is less literature that explores specific entrepreneurship-oriented strategic management constructs as lenses through which higher education practitioners can promote improvements in achieving organizational objectives. This study focuses specifically on detecting absorptive capacity and strategic learning capability behaviors in enrollment management organizations and how those behaviors are leveraged for admissions and marketing purposes, related to recruiting and matriculating a first-year class.

This is significant because it can be quite costly to attract freshman students who have many options for their college destinations. By using ACAP and SLC to potentially make individual student acquisition costs lower, resources within an IHE can be directed either toward

other institutional priorities (outside of admissions and marketing) or toward attracting high-value prospects.

Conceptual Framework

Enrollment management functions, and especially admissions and higher education marketing, have seen rapid change in the last half-century. On the consumer side, "students have more options and more access to greater amounts of information than ever before" (Kilgore & Gage, 2014, p. 432). Strategic enrollment management (SEM) units, and university administrations in general, are making data-driven decisions in more compressed time frames than ever before. Some of these changes are the result of developments in how prospective students and their families consume information, as well as an increased sense of urgency because competing institutions may have better data systems, analytics or technological tools. SEM units can leverage the latest software and technology, including recruitment management systems, contact management databases, and platforms that integrate recruitment systems with students' internal academic records (Kilgore & Gage, 2014). The ability to leverage internal, integrated data stores for decision-making is linked to increased decision-making power. Eisenhardt (1989) noted that fast decision-makers, in high-velocity environments, use "more, not less, information" compared to slower decision-makers (p. 543).

Although some information that serves strategic purposes will be housed within the SEM unit, and can be leveraged for competitive gain, there also exists knowledge in the external environment that can advance the strategic aims of a college or university. Simple processes and routines can be utilized to meet certain aims and achieve some results in organizations, however, Winter (2000) defined a capability differently than processes and routines. Specifically, Winter argued that:

> *An organizational capability is a high-level routine (or collection of routines) that, together with its implementing input flows, confers upon an organization's management a set of decision options for producing significant outputs of a particular type.* (emphasis in original) (p. 983)

Absorptive Capacity

To discuss the capability to leverage external information, I now turn to Cohen and Levinthal's (1990) construct of absorptive capacity (ACAP). Absorptive capacity, as a capability, allows an organization to "*recognize* the value of new information, *assimilate* it, and *apply* it to commercial ends" [emphasis added] (Cohen & Levinthal, 1990, p. 128). Zahra and George (2002) offered a reformulated construct for absorptive capacity, with four embedded behaviors: acquire, assimilate, transform, and exploit (p. 186)**.** According to Lane, Koka, and Pathak (2006), "[d]eveloping and maintaining absorptive capacity is critical to an [organization's] long-term survival and success because absorptive capacity can reinforce, complement, or refocus the [organization's] knowledge base" (p. 833). Using the Zahra and George construct, and expanding on other ACAP scholarship, Flatten, Engelen, Zahra, and Brettel (2011) introduced a set of scales that can inventory ACAP behaviors in an organization.

The capability to leverage ACAP (and the four behaviors associated with ACAP) would constitute a firm-level resource under Barney's (1991) resource-based view, and provide opportunities for competitive advantage. Additionally, Shane (2000) and Dimov (2007) both highlighted the significance of *prior knowledge*, which is a key factor in individual organizational actors being able to leverage the value of information and exploit opportunities for competitive gain. In the case of an admissions office, utilizing ACAP capabilities would require individuals within the organization to have enough prior knowledge about external

activities to recognize potential information as valuable. There must also be established pathways and systems inside the organization for the information to be acquired and assimilated across the organization. Finally, the organization must be equipped with the ability to transform the knowledge and leverage the external information to gain a competitive advantage. Absent the ability to acquire, assimilate, transform, and exploit the information, the organization cannot reap the full benefits of absorptive capacity.

Strategic Learning Capability

Strategic learning capability (SLC) describes an organization's proficiency to integrate knowledge from past strategic actions into future strategies and strategic decisions (Anderson, Covin, & Slevin, 2009). This definition builds on Pietersen's (2002) work that situates SLC within the context of a learning organization, or "an organization with an enhanced ability to generate, capture, and share knowledge" (p. 46). In particular, though, Anderson, Covin, and Slevin's (2009) study focuses on "how *good* the firm is at generating strategic knowledge and how *good* the firm is at using that knowledge to improve its competitive position" (emphasis in original) (p. 219). In this study, an individual college or university will constitute a "firm." The exploration in this study will evaluate both absorptive capacity behaviors related to external information, as well as strategic learning capability activities.

Outcomes in Higher Education Admissions

Institutions of higher education have a variety of goals and strategic objectives. In the admissions space, goals and objectives related to the characteristics of an incoming class, including the test scores of applicants or their racial/ethnic diversity mix, are more salient metrics for the goals of some IHEs than others. IHEs also have goals related to the outcomes of recruitment and admissions processes. For example, many institutions set goals with respect to

overall yield of an incoming class (the percentage of students who enroll in the institution out of those to whom an offer has been extended). Yield goals vary between institution and institution types, but yield remains an important characteristic of a given admission cycle as well as an important signaling device for an individual IHE (Chang, 2006). Specifically regarding yield, Chang (2006) stated:

> Even though the need for increasing the yield may differ by institutions, the knowledge of who enrolls and why or who does not enroll and why not is always useful for admissions officers and university administrators. Answers to whether admitted students enroll randomly or whether certain groups of students enroll in certain institutions have significant implications for schools intent on increasing their admissions yield (p. 54).

Institutions also engage in practices focused on growing their applicant pool overall, increasing the number of applicants who apply to their colleges and universities. Working to increase the total overall enrollment of their institutions, when done while leveraging economies of scale in course delivery, can lead to increases in net revenue for an institution.

Research Questions

This study explores how strategic activities, specifically absorptive capacity (ACAP) and strategic learning capability (SLC), increase effectiveness of SEM units and aligned areas (e.g., admissions, financial aid, and marketing) as reflected by the selected outcome measures. This study had one overarching question: *To what extent are ACAP and SLC behaviors associated with improved outcomes in recruitment and enrollment at four-year institutions?*

Key outcome indicators, in the context of this study, include data available through the Integrated Postsecondary Education Data System (IPEDS), including admit rate percentage,

number of enrolled students, yield, average SAT scores, racial make-up of the incoming class (as a proxy for diversity), and the number of applications received by an institution. In answering this question, this study will explore outcomes in the aforementioned areas as well as how ACAP and SLC behaviors can predict higher performance in these areas, potentially leading to benefits for the institution.

Within the scope of the overarching question above, the study specifically investigated the following research questions:

RQ 1. To what extent are ACAP behaviors associated with higher performance on key indicators of SEM success in recruitment and enrollment?

RQ 2. To what extent are SLC behaviors associated with higher performance on key indicators of success in recruitment and enrollment?

RQ 3. To what extent are ACAP behaviors perceived by higher education leaders to positively impact a given IHE's key outcomes in recruitment and enrollment?

Organization of the Dissertation

This dissertation is organized in five chapters. Chapter One presents an overview of the problem to which the dissertation responds in strategic enrollment management. Chapter Two offers a review of literature from strategic management and higher education that is relevant to the study. Chapter Three outlines a methodology for the study. In Chapter Four, a thorough analysis of the collected data is provided. Chapter Five provides an overview of the study's findings, offers a discussion of implications for practitioners, and highlights potential future directions for this research.

CHAPTER TWO: REVIEW OF LITERATURE

The purpose of this study is to examine absorptive capacity (ACAP) and strategic learning capability (SLC) as capabilities within enrollment management, marketing, and student recruitment in four-year institutions of higher education (IHEs). Although there is significant literature in higher education about strategic planning and organizational behavior, there is less literature that explores specific entrepreneurship-oriented strategic management constructs as lenses through which higher education practitioners can promote improvements in achieving organizational objectives.

The literature review proceeds as follows. First, I briefly state the case for using business literature and applying it to higher education. Next, I introduce three categories of literature that are relevant for this review: (a) literature that illuminates status quo practices in enrollment management; (b) business strategy literature that can help enrollment management functions respond to external market forces and the external environment; and (c) business strategy literature that supports work on the internal environment and internal assets. Focusing on status quo practices and relevant business strategic management literature is helpful to establish a baseline understanding of practices in the fields. I turn to the external environment because this is the part of the strategic landscape from which institutional pressures are often derived, including state appropriations effects, customer demographic changes, regulations, administrative changes by regional and field-specific accreditors, or employment and labor market issues. The external environment has a significant impact on all industries, and an especially pronounced one in the case of higher education. I then review literature that relates to the internal environment because of the significance that internal environment structure, operations, myths, culture, customs, and values plays for the multitude of actors involved in higher education, including faculty, staff, and enrolled students. I intentionally focus on the

external environment before the internal environment because activities in the external environment can often inform, shape, and affect practices, processes, and events that occur internally. After reviewing the external and internal environment, I review literature that relates to the selection of control variables included in the study. Finally, I conclude with an appraisal of the literature gap related to my research question and the literature reviewed in this study.

Is Higher Education a Business?

Within higher education, and within stakeholder groups that are connected to higher education, there is significant debate about whether higher education should "see itself" as a business. For the purposes of this study, I explore higher education as an operating business, and with the mindset that traditional business functions can be mapped to internal components of higher education. For example, an IHE's marketing and admissions offices serve to educate prospective customers about the institution. The financial aid office serves to help adjust the pricing strategies of a given IHE. The debate about whether higher education is a business has been occurring for a long time. (Kirp, 2004; Krachenberg, 1972).

Gregoire, Barr, and Shepherd (2010) articulated that one of the difficulties in being a deeply entrenched actor in a given organization or industry is a tendency to miss strategic opportunities because the "uncertainty about the origin, extent, and consequences of environmental changes" can make opportunity recognition difficult (p. 413). I posit that one potentially missed strategic opportunity is layering more ACAP and SLC behavior into admissions marketing and student recruitment.

With the stipulation that higher education is a business undergirding the foundation of this work, and recognizing the incorporation of business lenses as a strategic opportunity in certain instances, I now turn toward the literature I will use to inform this study.

Status Quo Practices in Admissions and Marketing

This section of the literature review considers current practices in enrollment management, some of which may be aligned with business sector practices and others, which may be unique to higher education. In considering both higher education sector-specific practices as well as more business-oriented practices, I draw upon a wide range of literature.

First, in this section, I open with literature that broadly examines enrollment management and enrollment management organizations. Next, I introduce literature that explores the college admissions office as a marketing function for the institution, further reinforcing the "higher education as a business" construct. I then consider literature that would support institutional change efforts that were associated with the marketing and recruiting functions. Finally, I close this section reviewing literature that may influence the decision-making processes around organizational change. Overall, this section introduces key literature relevant to the field of enrollment management and higher education and helps identify specific literature related to organizational change efforts, noting conditions under which organizational change efforts may be particularly successful and highlighting sense-making activities that can affect organizational change initiatives. This section also considers the importance of relationship marketing.

Hossler, Kuh, and Olsen (2001) refuted the notion that higher education scholarship and institutional research fail to lead to policy adoption and implementation on campuses. Using institutional change at Indiana University as a case-in-point for policy implementation at large public universities, the authors explored the complexity of change management and policy implementation at higher education institutions that, the authors observed, often have decentralized administrations, and in which various unit-level activities are not consistently aligned to work together. This article highlights the need to collaborate across administrative

areas, particularly student affairs and academic affairs. This article is introduced as foundational for this literature review because it highlights both the significance of the study in general (that research and scholarship can lead to policy adaptation) as well as the importance of policy adoption and change, done in a collaborative manner, within higher education. After considering the impact of scholarship on policy adoption within higher education, I turn to the context of enrollment management as a field itself.

The Field of Enrollment Management

Hossler and Kalsbeek (2008) explored the context of enrollment management as a field, including historical context for professional meetings arranged around enrollment management, as well as exploring the optimal structure of enrollment management within the university setting and critiques of enrollment management as a field. Such critiques include questions, for example, about whether admissions and financial aid should be systematically linked to other Strategic Enrollment Management (SEM) operations (e.g., retention, advising) or whether the areas should remain structurally separate. I include this article to demonstrate the evolution of the field, and the non-static nature of the organizational structures. In other words, SEM units do not simply need to be organizations within IHEs that are established and then left in their founding structure long-term. Rather, individual IHEs may be motivated to modify their SEM units' policies, practices, and protocols, and the field itself continues to discuss new and different mechanisms for management and operations.

College Admissions as a Marketing Function

After considering higher education broadly and enrollment management specifically, I turn to literature that will inform this study regarding higher education marketing. McDonough (1994) analyzed the social construction of a new identity: "the college applicant" as being the

byproduct of two strong processes: (1) the process by which colleges market to, and select, applicants; and (2) the process through which applicants make themselves more desirable to particular institutions of higher education. McDonough particularly considered the college applicant in the context of high-socioeconomic status (SES) individuals who are able to afford private college counseling, packaging and advising services, which McDonough terms under a new construct – "admissions management." This work fits with this study because it helps contextualize the mindset and attributes of one type of applicant to institutions, who will interact with the enrollment management cycle. Additionally, the high-SES applicant who "plays the game" and participates in the "admissions management" process is not representative of a major swath of American college applicants, but is a valuable type of applicant to be aware of in considering how top-tier colleges may be structuring their recruitment efforts (the same recruitment efforts that affect lower-income/lower-SES students who are also playing the same "game" with far fewer resources than their higher-SES counterparts). In addition to Canterbury's older work, I also consider more contemporary scholarship that informs the conversation on marketing.

Canterbury (2000) explained why marketing in higher education is a special category of marketing altogether. Canterbury argued that college choice is a unique decision (often made only once) that is fraught with issues of human development, the weight of collective family decision-making, a lack of prior experiences (most students have never applied to college before and sometimes their parents either applied in different market conditions or have never applied) and the criteria for selection are not clear (colleges may advertise great housing or gym facilities, but that may create confusion around which product is really being purchased from the institution – because the long-term investment is the education and the degree that stay with you

after college). Because this study explores literature from both the fields of branding and admissions in higher education, this article is a useful reminder of specific challenges and questions higher education organizations face when operating in marketing functions. In addition to broadly considering marketing within higher education, I look at relationship marketing-specific literature.

Now that I have considered marketing-specific literature to inform my study, I turn to additional literature that informs the higher education marketing construct.

Literature Informing Higher Education Marketing

Consistent with the notion from Canterbury (2000) that higher education marketing is a specific phenomenon, I now introduce literature that supports higher education marketing and allows for IHEs to specifically leverage the advantages that can be gained from relationship marketing.

Eisenhardt (1989) explored how "executive teams make rapid decisions in […] high-velocity" environments and industries, concluding that fast decision makers "use more, not less, information than do slow decision makers." In addition, and counter-intuitively, fast decision-makers leverage "more, not fewer, [decision] alternatives and use a two-tiered advice process" (p. 543). The article fits with my study, and is relevant, because I examine how decisions are made in recruitment, enrollment management, and marketing. The significance of the article's focus on high-velocity environments stems from the increasing shortness of decision-making cycles in higher education, with multiple channels of communication between students and institutions. By increasing their ability to respond to multiple channels of communication, and competitors whose admission decisions are offered earlier and earlier, institutions that employ high-velocity decision-making tactics may gain a competitive advantage in the admissions

landscape. In addition to having systems in place that allow for quick decisions, organizations must also have practices that signal when there are problems (and have protocols and an organizational culture that encourages a bias toward action).

Kezar and Eckel (2002) examined specific governance challenges that can hamper institutional change efforts. The authors analyzed institutional change efforts, particularly transformational change efforts, with an emphasis on how context-appropriate data can be used to drive and facilitate change. Further, Kezar and Eckel examined the implications of organizational culture on transformative change, both in terms of how change processes are thwarted by institutional culture and how leaders can be more effective. This article fits with this study because, ultimately, change processes are led by humans, organizational leaders, who will have to enact them. As discussed above, there may be strong biases to continue traditional practices or protocols that make little financial or performance sense, because of either a lack of known alternatives, or due to custom and nostalgia.

This literature review has heretofore explored literature related specifically to the functional areas most germane to this study (higher education admissions and marketing) and attempted to supplement with relevant literature (concerning decision-making and organizational change). Next, the literature review introduces Gioia and Thomas (1996), who explored an additional challenge associated with higher education organizational change: the perceptions of top-level managers and senior administrators in IHEs who are going through periods of change. Gioia and Thomas (1996) "[investigated] how top management teams in higher education institutions make sense of important issues that affect strategic change in modern academia" (p. 370). Their sample included 611 top managers from 372 colleges and universities. Gioia and Thomas' findings indicated that "under conditions of change, top management team members'

perceptions of identity and image, especially desired future image, are key to the sensemaking process and serve as important links between the organization's internal context and the team members'' issue interpretations" (p. 370). Gioia and Thomas's paper is relevant because it describes top managements' perceptions during organizational change. These perceptions are also key to understanding how top management determines which organizational issues are allocated attention, and with what urgency.

As I conclude this section, which introduced literature on higher education marketing and admissions as well as key higher education change management concepts, I turn toward literature that looks at core business concepts that will apply to this study.

External Market Forces, the External Environment, and Business Strategy Including Absorptive Capacity

This section considers literature that will allow colleges and universities to respond to the external environment and external market forces to best position themselves for competitive advantage for their desired customers. In this section, I introduce absorptive capacity (ACAP), a construct developed by Cohen and Levinthal (1990). Cohen and Levinthal identified three processes firms complete to demonstrate the capability of absorptive capacity, remarking that: "the ability of a firm to *recognize* the value of new, external information, *assimilate* it, and *apply it to commercial ends* is critical to its innovative capabilities" (emphasis added) (p. 128). The authors explore cognitive structures and firm knowledge systems, tracing the transition from individual to organizational absorptive capacity, noting the inherent importance of individual organizational members in contributing to the absorptive capacity of the firm overall (p. 131). This article is an appropriate fit, and helpful for my research because a component of my project focuses on importance – and necessity of – individual agency among multiple levels of

employees in higher education organizations. In addition to highlighting agency, this work looks at how managers allocate attention to lower-status employees and respond to information, even if the source is not "high value."

Although their work highlights the impacts of individual contributors, Cohen and Levinthal noted the significance of the organization as a whole possessing absorptive capacity as a capability. Thus, it is not enough for individual actors within the firm to recognize high-value external information, bring the information back to work with them, and leverage it to some ends within the firm; there needs to be a systematic, enterprise-wide (or at least unit-wide) approach to leverage ACAP behaviors, or the full potential of absorptive capacity goes unleveraged. ACAP is particularly helpful as a mechanism of organizational learning, in which the organization itself can acquire new stores of knowledge that can be used competitively. Zahra and George (2002) offered a reformulated construct for absorptive capacity, with four embedded behaviors: "*acquire, assimilate, transform***,** and *exploit"* (emphasis added) (p. 186)**.** According to Lane, Koka, and Pathak (2006), "[d]eveloping and maintaining absorptive capacity is critical to an [organization's] long-term survival and success because absorptive capacity can reinforce, complement, or refocus the [organization's] knowledge base" (p. 833). Using the Zahra and George construct, and expanding on other ACAP scholarship, Flatten, Engelen, Zahra, and Brettel (2011) introduced a set of scales that can inventory ACAP behaviors in an organization.

The capability to leverage ACAP (and the four behaviors associated with ACAP) would constitute a firm-level resource under Barney's (1991) resource-based view, and provide opportunities for competitive advantage. Additionally, Shane (2000) and Dimov (2007) both highlighted the significance of *prior knowledge*, which is a key factor in individual organizational actors being able to leverage the value of information – and exploit opportunities

– for competitive gain. In the case of an admissions office, utilizing ACAP capabilities would require individuals within the organization to have enough prior knowledge about external activities to recognize potential information as valuable. There must also be established pathways and systems inside the organization for the information to be acquired and assimilated across the organization. Finally, the organization must be equipped with the ability to transform the knowledge and leverage the external information to gain a competitive advantage. Absent the ability to acquire, assimilate, transform, and exploit the information, the organization cannot reap the full benefits of absorptive capacity.

Competitors Are Part of the Reality

Porter's (1980) five forces focus on aspects of the external environment that shape competition: (1) threat of new entrants in the marketplace; (2) bargaining power of buyers; (3) threat of substitute products or services; (4) bargaining power of suppliers; (5) rivalry among existing competitors. These five forces affect campuses, colleges, and universities differently. In a market with multiple institutions, rivalry among competitors could be a major concern of the enrollment management unit, while in the vocational education space, the threat of substitute products or services could be a considerable threat. (For example, "coding camps" are joining the market and providing graduates with 10-week programs that train them in computer science and applications coding, substituting for college-based computer science and programming training that students might have otherwise sought.) I include this work in my review because of the salience of competition in shaping administrative decision-making, organizational culture, and internal myths within higher education.

In addition to Porter's broad look at competitors, Castrogiovanni (2002) considered the impact of organizational task environments. Castrogiovanni analyzed "three task environment

dimensions – munificence, dynamism, and complexity" in manufacturing within "45 established industries and 43 new industries" (p. 129). According to Castrogiovanni, dynamism and complexity "tend to be greater in new industries than established ones," which makes sense given the conventional wisdom about changing task environments in the increasingly complex global workplace. Munificence refers to the "extent to which the environment provides enough resources to support established organizations and new entrants" and allows both to be successful (Castrogiovanni, 2002, p. 132). This is relevant to higher education, because higher education is a mature and established industry, but increases in entrepreneurial orientation within higher education may cause certain individual task environments to increase in dynamism and complexity, mirroring the task environment in more nascent industries.

In contrast to Castrogiovanni's (2002) consideration of the task environment, Nadkarni and Barr (2008) looked broadly at environmental context, managerial cognition, and strategic action. Nadkarni and Barr (2008) attempted to reconcile how environmental context and managerial cognition drive strategic decision-making, particularly with regard to how the view of the organization held by managers, with respect to perceived environmental velocity, can affect decision-making. In other words, certain managerial environments require high-velocity decision-making and responsiveness to environmental conditions. (This certainly would be true for the enrollment management team at a career-oriented college that serves a number of local employers with specialized degree programs. If there were to be major layoffs at one employer, or a need for retraining, the enrollment management team – and the college's academic affairs management – would need to adapt degree programs to be responsive to environmental challenges.) Other units would not need to be as responsive (e.g., the bursar's office). Nadkarni and Barr posited that managers draw a series of conclusions while decisions are made, and

reinforce and draw upon these conclusions throughout the decision-making process. I include this literature to better understand the position of both administrative and academic leaders in higher education, especially for institutions that are in high-velocity environments, or whose product (i.e., degrees) are targeting students whose needs are particularly susceptible to corporate influences (e.g., business students, or, perhaps, individuals working in the automotive industry in a market like Detroit).

Building Brand Equity and Organizational Learning

In addition to being leveraged simply to bring external knowledge into the organization, ACAP can facilitate increases in an organization's brand equity within the marketplace. Campbell (2002) explored how brands and branding processes help organizations and products retain sustained competitive advantages in the marketplace. Specifically, Campbell focused on brands as points of convergence that, even independently of a specific product, have signaling value in the marketplace and enable the consumer to consider the brand of an organization as a form of promise. In addition, Campbell explored how brands can lower risk by signaling that the customer is making a good or worthwhile acquisition with his or her capital. This article is easily transferrable from the medical industry to higher education, where the customer can be investing tens of thousands of dollars in the acquisition of a one-time product (you only go to college once, in many cases) and must be assured that the investment will be a good one. Sometimes customers can use even the most superficial or tangentially relevant details when making the decision about where to go to college. For example, there is ample evidence to support a surge in applications at institutions where athletic teams do significantly better one year than the year before. There may be little correlation between the number of points a basketball team scores and the employability of an institution's graduates, but even slightly related (or unrelated) factors can

influence the perceived worth of an institution's reputation. Institutions with higher absorptive capacity are in a better position to leverage the data in the marketplace that ties in with their brand equity. In addition to exploring the broad concept of brand equity, Agarwal and Rao (1996) identified a series of specific elements of brand equity, including awareness, recall, familiarity, perceptions and attitudes, and choice intentions.

Building on previous work in marketing, Keller explored customer-based brand equity, specifically the processes that customers undergo when they recall strong brands (e.g., Coca-Cola, Pepsi, Harvard) and have positive associations with them (e.g., delicious, world-class, excellence). Keller presented two dimensions of the "total brand": brand awareness and brand image. Brand awareness relies on the customer's ability to recall the brand based on prior experiences with the brand, whether those experiences were in-depth, long-term, high-touch experiences (e.g., a summer camp at *University A* in which a prospective student participated) or more superficial distant experiences (e.g., a favorite teacher who went to *University B* or the quality of a football team.) The second dimension of the total brand, brand image, includes multiple sub-components, including product-specific attributes, non-product attributes, and brand attitudes. Brand attitudes, which are separate from products and reflect the "personality" a consumer might associate with a brand, can be extremely powerful and drive consumer decisions. This, in part, explains why a student might choose a school because of its winning football team. I included this article as part of my exploration of branding literature and my search to locate additional scholarship that will help the reader and myself better understand the brand management activities in higher education, brand management activities that are often central to enrollment management endeavors.

In addition to fostering the ability to accurately respond to brand components, ACAP also helps facilitate organizational learning, specifically vicarious organizational learning. Vicarious organizational learning takes place when an institution or organization is able to learn, or add to its knowledge stores, based on activities that are taking place at peer or competitor organizations. Although new organizations (or organizational subunits) are thought to lack absorptive capacity (the ability to identify, assimilate, and exploit information) because of the "liability of newness," Posen and Chen (2013) explored how new organizations may have an advantage because of the benefits of vicarious learning and the ability to quickly assimilate information from other players in the marketplace. This article's relevance to this study comes from the fact that individual academic responsibility centers continue to add within-school enrollment management units that supplement the SEM units that are part of the larger university structure. I use the article to explore scenarios in business related to new organizations and vicarious learning to draw inferences about potential advantages to "start-up" enrollment management units for specific academic responsibility centers. This article would also be relevant for new colleges and universities or for new branch campuses (either, for example, a suburban or rural university's extension campus in an urban or city center– away from the main campus – or international branch campuses that can derive lessons from the competitors in their new international market).

Internal Structure, Resources, and Organizational Culture

Although external actors, market forces, and environmental constraints can shape the way that enrollment marketing and undergraduate recruitment units interface with their environment, organizational performance – and the ability of enrollment management operations to be successful – often depends as much on how the organization is internally organized for success as on the external environment and market forces. In this section, I consider internal assets as

competitive resources, look at internal sense-making and meaning construction, consider how organizations allocate their attention, and also explore the person-situation learning match and potential ways in which this would affect organizational outcomes.

Barney (1991) proposed a model, the resource-based view of the firm (RBV), that looks at "all assets, capabilities, organizational processes, firm attributes, information, and knowledge" (p. 101) that are used to create a sustained competitive advantage distinct from activities going on in other firms. Barney offered that to create a sustained competitive advantage, such resources must come together to be valuable, rare, inimitable, and non-substitutable. This literature fits, and is relevant, for my project because of the "narrative of distinctiveness" that individual institutions of higher education frequently promulgate, touting their unique strengths and benefits in the marketplace. It will be useful for making an argument about how institutions can leverage individual resources. Barney organizes the resources into three distinct types: human capital, organizational capital, and physical capital. These three distinct types of resources provide a useful framework under which enrollment management organizations can assess the internal environment of the college or university and conduct an RBV-based audit to determine specific strengths and assets based on Barney's categories.

I now turn to a host of other issues that affect the internal environment: internal sense-making, meaning-making, allocation of attention, and individual traits and inclinations affect the deployment of an organization's resources in support of strategic objectives.

Internal Sense-Making and Meaning-Making

Over decades, literature has explored meaning-making in organizations. In this sub-section, I consider: organizational sagas; the role of organizational myths, norms, rules, and

culture; and the image-based lenses through which organizational leaders analyze and observe our organizations.

Clark (1972) defined organizational sagas as:

> a collective understanding of a unique accomplishment based on historical exploits of a formal organization, offering strong normative bonds within and outside the organization. Believers give loyalty to the organization and take pride and identity from it. A saga begins as strong purpose, introduced by a man (or small group) with a mission, and is fulfilled as it is embodied in organizational practices and the values of dominant organizational cadres, usually taking decades to develop. (p. 178)

One of the features of organizational sagas is that they show "high durability" when built slowly in structured social contexts, particularly in the cases of "special performance" (p. 179). Such sagas may create challenges in response to organizational change, or process change, both of which are related to my research project.

Subsequent to Clark's study on the effect of sagas within organizations, Meyer and Rowan (1977) explored the effects of norms, rules, myths, professional understandings, and policies on the formalized structure of organizations, noting that "rationalized professions" and isomorphism (forced changes based on legitimacy connoted through external peer organizations) can have a significant impact on the actual rules and policies by which organizations are internally managed and governed. They particularly delve into the effect that environmental norms and instrumental documents (for example, titles, organizational charts, structural plans) can have on dictating internal coordination and control. Because this study focuses on organizational systems, it is worth noting that organizational actors (particularly staff) sometimes limit themselves either because of external myths generated through professions or internal

norms that are established within the institution. Meyer and Rowan's work can serve as a warning that too much investment in "looking like" another institution can lead to staff having limited agency and an attenuated ability to resolve student or organizational issues. In other words, by intentionally redefining roles, myths, and constraints, institutional actors may uncover new ways of improving the delivery of services and programs. Subsequent to Meyer and Rowan's (1977) work, Tierney (1988) took stock of the role of organizational culture in higher education organizations in a three-part article examining the role of organizational culture in a higher education organization, ways that scholars have attempted to define organizational culture, and a specific organizational culture case at an American college. Tierney considered how culture is created through the use of stories, norms, assumptions, and ideology, which all contribute to a collective sense of organizational culture. Because some of the frameworks I am considering for my project (e.g., entrepreneurship or absorptive capacity) may be at odds with practices under existing organizational cultures, I have included Tierney's article to better understand what contributes to culture and how organizational cultures may be able to adapt to change and transformation.

Meaning-making and sense-making do not occur only through the lens of sagas and organizational norms and culture. Image management is another lens through which internal stakeholders make sense of their organization's position in the marketplace. Parameswaran and Glowacka (1995) explored how universities manage their images, particularly through increased use of traditional strategic marketing tools, including advertising and positioning. What makes Parameswaran and Glowacka's study particularly relevant to this study, and different from other literature included in this review, is their focus on how the image of the university affects the evaluation of *graduates* of that particular institution. The authors administered an instrument that

included six categories of perceptions (employees' knowledge, skills, productivity, employability, personality, and motivation) and was given to 240+ human resources managers in the Midwest. The authors found that the perception of graduates from individual institutions are formed on the basis of a very small number of criteria, five or fewer characteristics in most cases. Parameswaran and Glowacka's study, while exploratory, suggests the importance of institutions burnishing strong brands that, ultimately, will serve as halo constructs to support beneficial student outcomes, including employment. This fits with this study because it serves as helpful support that marketing and branding matter, in this case, in the employment context. It will allow me to advance the argument that one benefit of colleges investing in branding is that graduates will become more employable than graduates of competitors schools if the brand is strong in the right criteria.

Weick, Sutcliffe, and Obstfeld (2005) contributed to the contemporary conversation on sense-making with their work that considers the importance of retrospective sense-making in organizations and the ability of sense-making to help shape a narrative, especially after mistakes or problems occur. By focusing on the combined sense-making of a group of individuals and looking at why a mistake came to be using a broad sense-making context (rather than just focusing on the proximate decision that led to the mistake), organizational leaders can accept shared responsibility for problems that are occurring.

Internal Resource Constraints: Attention and Other Resources

In this section, I look at two specific types of resource allocation that can affect organizations, and will have significant effects in enrollment management organizations: *allocation of attention* and the *bricoleur's perspective.* Building on the notion of satisficing, Ocasio (1997) proposed three principles for distribution of attention within organizations: (1) the

focus of attention; (2) situated attention; and (3) structural distribution of attention. Ocasio acknowledged that different organizational players have a finite amount of attention, and can pay attention only to certain priority items. Next, he examined the context in which attention is given, noting that someone's role within the organization dictates the signals to which he or she pays attention. Finally, Ocasio explored status differences and how they can affect the allocation of attention, noting that organizations with power differential can create structures in which key signals do not receive attention because managers fail to value signals given from subordinate employees. Because enrollment management work, at the grand strategy level, relies on data and various signals, I chose to include this work in my literature to highlight how key decision-makers allocate attention in higher education organizations.

With Ocasio's work, I consider attention as a finite resource in higher education. Often, though, higher education organizations are operating in severely resource-constrained environments. Baker and Nelson (2005) presented the concept of *bricolage* as an entrepreneurial tool to be deployed in resource-constrained environments. In their study, they viewed the bricoleur as someone who is able to "make do" with the resources available at hand (whether those are financial, human, physical, or other resources) to construct winning solutions to pressing and complex problems. Sometimes, Baker and Nelson observed, the solutions that emerge from the resource-poor environments are even better than the solutions that would have emerged from resource-rich environments. Advancing bricolage – "making do by applying combinations of the resources at hand to new problems and opportunities" (Baker & Nelson, 2005, p. 333) – Baker and Nelson made an important contribution by noting that traditional resources are not always required to make a substantive and impactful contribution. As part of their theory, they noted that some organizations are very good at "construct[ing] resources from

nothing" (p. 332) leading to a scenario in which different organizations "will discover and elicit different services and combinations of services from similar objective resources" (p. 332). What does this mean in the context of higher education? Considering some of the resource-constrained environments faced by higher education leaders, bricolage has the potential for a strong and synergistic relationship with Cohen and Levinthal's (1990) aforementioned construct of absorptive capacity, by leveraging the knowledge that leaders are able to bring into the organization, and leverage/exploit it through the art of bricolage.

Prior Knowledge, Valuing the Individual and Learning from Failure

Jenkins, Wiklund, and Brundin (2014) leveraged appraisal theory to analyze how individuals respond to business failures. Individuals who are "portfolio entrepreneurs" (i.e., those who own or manage more than one venture at a time) tend to respond better to failure, and are able to rebound more quickly, than individuals who focused on one venture. In many cases, leading an enrollment management division in higher education is similar to serving as a portfolio entrepreneur, with an enrollment chief having several organization sub-units where entrepreneurial and new-venture strategies can be applied. I selected this article for inclusion, to consider how individuals may respond to failed initiatives in higher education, particularly those that are related to organizational change.

Ongoing and Continuous Improvement: Dynamic Capabilities and Adaptability

Although implementation of business strategies may be helpful in the short term, it is crucial to ensure that organizations develop routines and processes that signal (without exhaustive human intervention, handwringing, or efforts toward detection) that processes and routines need to be updated. I include work from two relevant strands of literature (dynamic capabilities and metacognition) that can be combined with some of the previously mentioned

strategies to ensure that routines, processes, and capabilities stay updated to meet the needs of the contemporary environment.

Zollo and Winter (2002) made the case that dynamic capabilities (the routines and processes which help organizations know when and how to modify existing routines and processes) are both semi-automatic and derived from organizational learning. Their article explores deliberate learning, and how – rather counter-intuitively – dynamic capabilities (which are often thought to be automatic) are actually strengthened through more rigorous and intentional forms of learning, including the codification of organizational information throughout all levels of an organization, including the lowest levels, rather than simply benefitting from superior top-level management. I have included this work in my review as justification for empowering staff at all levels of an enrollment management organization, including line staff, as agents for improvement and transformation. By actively contributing to the codification of knowledge and learning, an employee at any level can contribute to the dynamic capabilities that lead to organizational improvement.

Haynie, Shephered, and Patzelt (2012) observed that "to realize and sustain a competitive advantage in such a context, one must respond strategically and iteratively to changes in the organization's environment" (p. 238), and suggest that cognitive adaptability among entrepreneurs – or individuals performing tasks without prior experience – is likely to be improved through the act of metacognition. The authors discussed how metacognitive knowledge of "(1) people, (2) tasks, and (3) strategy" (p. 241) blends both individuals' knowledge about their own thinking and the thinking of others. In relation to my work that looks at systems and organizations in higher education, this literature is relevant because as autonomy increases in higher education organizational sub-units, so too will the need for metacognitive activity and

reflection. Haynie, Shepherd, and Patzelt's framework provides a context for individuals acting with greater autonomy to learn from their own actions, decisions, and mistakes.

Strategic Learning Capability and Enrollment Management

Pietersen (2002) suggested that executives modify the prevailing wisdom about organizational change – that it was a fixed-point event that happened within an organization – to a model in which change is regularly occurring as part of the processes and operations within an organization. Citing a need for systematic processes that compel organizations to be innovative, Pietersen (2002) cited "four key steps – *learn, focus, align, and execute* – which form a self-reinforcing cycle that combines learning, strategy, and leadership into one organic process" (emphasis in original) (p. 4). It is with this four-step set of processes that Pietersen has coined "Strategic Learning Capability."

Strategic Learning Capability is not simply a theoretical construct, but has been utilized in empirical studies of organizations, including Anderson, Covin, and Slevin's (2009) study of 110 manufacturing firms, and the impact of another strategic management construct – entrepreneurial orientation – on the strategic learning capability of the manufacturing firms. Their study also includes the use of scales that this study will adapt, leveraging their tested scale items in the context of higher education.

Consideration of Control Variables

The data analysis in this study controls for several variables that are indicative of characteristics of participants' institutions, including wealth, size, selectivity, public/private control, and Carnegie classification. More information on methodology and data analysis are provided in Chapters Three and Four respectively. Although these variables have been selected to control for broad institutional characteristics, they are not intended to represent all of the

characteristics of institutions. In writing about the Carnegie Classification system specifically – but with sentiments that can be generalized beyond only one ranking system – McCormick and Zhao (2005) wrote that "We all know that colleges and universities differ from one another along many dimensions" (p. 56). Care has been taken not to generalize too liberally from effects that appear to be tied to institutional characteristic variables; the selected control variables were used – to a degree – to inform the analysis of data collected in this study, as well as in the regression models in Chapter Four;.

Discussion of Literature Review

After considerable literature review, I have found significant literature focused on the higher education context that leverages marketing and organizational theory from the business domain, but less literature that leverages strategy and entrepreneurship. Therefore, I offer that the gap in the literature exists at the intersection of entrepreneurship and strategy (e.g., absorptive capacity, structural alignment, failure response, resource-based view) and current practices in higher education enrollment management. It is in this gap where I seek to make my contribution.

CHAPTER THREE: METHODOLOGY

This study was conducted using a survey instrument administered to admissions, marketing/public relations, financial aid, and enrollment management personnel at four-year non-profit institutions of higher education. This chapter provides an overview of the methods used to measure the relationship between Absorptive Capacity (ACAP), and Strategic Learning Capability (SLC), and strategic enrollment outcomes. Specifically, this chapter reviews the research questions relevant to this study, and provides detail on the sampling and data collection techniques. This chapter also provides detail on the analytic techniques used in analyzing the data.

Review of Research Questions, Key Variables, Unit of Analysis, and Hypotheses

This study explores how strategic activities, specifically absorptive capacity (ACAP) and strategic learning capability (SLC), increase effectiveness of SEM units and aligned areas (e.g., admissions, financial aid, and marketing) as reflected by the selected outcome measures. This study had one overarching question: *To what extent are ACAP and SLC behaviors associated with improved outcomes in recruitment and enrollment at four-year institutions?*

Within the scope of the overarching question above, the study specifically investigated the following research questions:

RQ 1. To what extent are ACAP behaviors associated with higher performance on key indicators of SEM success in recruitment and enrollment?

RQ 2. To what extent are SLC behaviors associated with higher performance on key indicators of success in recruitment and enrollment?

RQ 3. To what extent are ACAP behaviors perceived by higher education leaders to positively impact a given IHE's key outcomes in recruitment and enrollment?

Variables

This section of Chapter Three reviews variables that were utilized this study, including dependent variables, independent variables, and control variables. More information on each of the variable groups, sources of data, and rationale for inclusion of the variables is provided below.

Dependent variables. In this study, dependent variables include applicant yield, number of applications received, admit rate, number of students who enrolled, average standardized test scores, and racial makeup of the incoming class (as a proxy for diversity). Data for these variables were downloaded from the Integrated Postsecondary Education Data System (IPEDS) for the most recent year for which final data were available, 2014, and merged with the respondent data file downloaded from Qualtrics. This concatenation took place after survey administration, but before the file was imported into SPSS.

Applications received, admit rate, and students enrolled. Many SEM units and admissions offices refer to an "admissions funnel" through which applicants move through a series of statuses: prospects, inquiries, applicants, admits, and enrolled students (Bischoff, 2007). Each step in the funnel represents a greater step for the potential student becoming an enrolled, matriculated student at that institution and often results in a concomitant – or specific – amount of attention, and series of activities, being directed at that student. At each stage in the funnel, there also are associated metrics that are important to SEM offices (e.g., conversion from application to admission, admit rate, gross yield, melt, etc.) (Duniway, 2012). Ultimately, larger

numbers of individuals in the funnel of prospective students lead to a perception that institutions are likely to meet their enrollment targets (and, ultimately, revenue goals).

Admit rate, specifically, was computed from two fields downloaded from the IPEDS dataset. In this study, admit rate represents the ratio of admitted students out of the number of students who applied to that institution, expressed as a percentage from 0 – 100. In cases of other outcome variables, improved performance corresponds to a higher value for the outcome measures. However, the directionality of hypothesis testing is reversed for admit rate. Thus, for this outcome, a negative coefficient represents improved performance.

Yield. Yield is a key measure in admissions operations, as it indicates the "proportion of students that [admissions staff] consider worthy of admission that actually choose to matriculate at their school" (McClain, Vance, & Wood, 1984). By better being able to predict yield, and understand the factors that lead to conversion of students from accepted to matriculated, institutions can better manage a host of capacity, revenue, and size challenges. Although not all institutions have the same yield goals, nearly all schools engage in some form of "yield management" (Avery & Levin, 2010, p. 2126).

SAT Scores. Standardized test scores continue to be used by colleges and universities as one of the key markers within a student's academic profile and, in turn, a key component in an institution establishing its overall student academic profile. The SAT is one of the most well-known standardized tests administered to college students in the United States (Korbin et al., 2008). Although the SAT itself is only one data point that points toward a student's potential success at an institution, the SAT combined with high-school GPA has a significant correlation with first-year performance in college (Korbin et al., 2008). The SAT is not without its detractors, however, with scholars arguing that the SAT is not a robust predictor of college

success, and that much of its correlation is "with students' demographic and socioeconomic characteristics" (Rothstein, 2004, p. 298). What is clear is that even if admissions officers state that SAT scores are not the measure by which applicants are judged, they remain a key component in the awards process for merit aid, and how a college measures the quality of its incoming class (Ritger, 2013; Seltzer, 2016).

Percentage of non-White students. A perhaps-unintended outcome of the high-profile court cases (e.g., *Grutter v. Bollinger*, 2003) that challenged admissions practices related to diversifying our college campuses is that, in defending themselves, colleges and universities have made it unequivocally clear that the diversification of institutions of higher education, to include historically underrepresented students, is a priority within college admissions practices (Tienda, 2013). Colleges and universities employ a variety of tactics to recruit members of historically underrepresented groups to campuses, including special outreach programs, pre-college summer programs, and immersive experiences on campuses. The percentage of non-White students has been included as a dependent variable in this study, because for many institutions recruitment of historically underrepresented groups is an SEM priority.

Independent variables. The multiple dimensions of absorptive capacity and strategic learning capability, according to Flatten, Engelen, Zahra, and Brettel's (2011) scale and Anderson, Covin, and Slevin's (2009) scale, constitute independent variables (IV) that may have a relationship to the dependent variables. As outlined in Chapter Two, ACAP is comprised of a variety of dimensions, including the (1) acquisition; (2) assimilation; (3) transformation; and (4) exploitation of external information (Flatten, Engelen, Zahra, & Brettel, 2011). SLC behaviors include the ability of an organization to recognize failures and suboptimal outcomes, pinpoint why initiatives are not working, and make changes that yield better outcomes from strategic

activities going forward. The survey instrument asks groups of questions that are related to each of these areas, as well as questions on overall strategic action within an organization. The regression values that resulted from exploratory factor analysis from each of the ACAP item groups (i.e., acquisition, assimilation, transformation, and exploitation) as well as SLC's regression value each constitute a discrete independent variable.

Control variables. This study controlled for wealth (endowment per student), size, selectivity, public/private control, and Carnegie Classification. Detailed information follows below on each of these control variables.

Endowment per student (wealth). Institutional wealth, as measured by endowment per student, can have an effect on the yield rate at colleges and universities. Specifically, a greater corpus of endowment funds, and concomitantly larger annual endowment draw, can enable the institution to invest dollars that help enhance the perceived quality or attractiveness of the institution (e.g., through enhancement of physical facilities). In addition, endowment income can be specifically directed toward enticing students (particularly from target populations) to attend the institution by permitting enhanced tuition discounting initiatives. Smith (2015) observed that top schools – often those with the largest endowments – "can use their superior resources to offer such sweeteners as need-blind admission and loan-free financial aid" (p. 25). Private four-year institutions tend to have both larger endowments and lower percentages of unmet student need. According to Baum and Ma (2010), trends from 2000-2010 indicated that the private institution discount rate was continuing to increase, while the public institution discount rate remained "relatively stable" (p. 1).

Institution size. Institution size is included as a control variable. It is worth noting, however, that institution size was not used in isolation to form generalizations, as it is only one

characteristic among many that can shape institutional practices or student experiences. Robst (2001) observed that researchers should be careful about inferences made using institutional characteristic categories as, for example, "[i]nstitutions with the same number of students and research output are not necessarily peer institutions" (p. 740). Pretermitting Robst's caution about not using institution size in isolation, there are ample studies that control for institution size. Bailey, Calcagno, Jenkins, Kienzl, and Lienbach (2005) found a negative relationship between institution size and individual student success. In addition to the ways student experiences are shaped by institution size, institutions supporting larger student populations may be more vulnerable to the challenges of larger bureaucracies. Although institutions of higher education have increased efforts toward collaboration and coordination, Alvesson (2013) observed that the "rumour of the death of bureaucracy is not only exaggerated—according to empirical studies, it is also false" (p. 125). With larger, increased populations, institutions also have larger bureaucracies where information-sharing can be more difficult.

Selectivity. Gansemer-Topf and Schuh (2006) observed that institutional selectivity provides "information on the general academic qualities needed for admittance into a specific institution" (p. 614). In a study that investigated the relationship between "institutional expenditures and first-year retention rates," Gansemer-Topf and Schuh (2006) wrote that including selectivity as a variable provides additional information on organizational behavior. Inasmuch as this dissertation study examines organizational behavior, specifically the behaviors related to absorptive capacity and strategic learning capability, institutional selectivity is a key variable for which this study controls. It is possible that the homogeneity of a population – or other specific population attributes of incoming populations to a given selective institution – will

have a relationship to the practices in which the marketing, admissions, and other strategic enrollment management teams are engaged (including ACAP and SLC behaviors).

In addition to selectivity providing information on general academic quality, students also use selectivity data published in college rankings "as proxies for educational quality" (Toutkoushian & Smart, 2001, as cited in Pike, Kuh, & Gonyea, 2003). Such behaviors by prospective students may predict that consumers (prospective students and their families, in this case) interact differently with institutions based on institutional selectivity, leading to potential differences in activities and behaviors within the admissions and marketing apparatus of highly selective colleges and universities. In general, rankings guides play a role in the decision process for only a small number of individuals, with the majority of college-bound students not using rankings guides at all, or not using them as a key component of their decision process (Brennan, Brodnick, & Pinckley, 2008).

Public/private control. The study controls for public/private control because the nature of an institution's control status (i.e., public vs. private) and governing structure can have a substantial effect on its administrative operations. Tolbert (1985) established that studies of higher educational organizations must differentiate between private and public institutions of higher education, which are organized differently as a result of distinctions in their typical sources of support. Private institutions, Tolbert (1985) observed, "have received their income primarily from tuition, endowments, and gifts and grants from private donors" (p. 3). Meanwhile, public institutions received income from a variety of governmental sources, including appropriations from state legislatures (Tolbert, 1985).

In addition to Tolbert's acknowledgment of differentiated funding streams for public and private institutions of higher education, controlling for public/private control also is prudent

because of other differences between the two control types, including the governing structures of the two types of IHE. For example, private institutions have governing boards made up of individuals specifically selected to serve the individual institution, often because of an alumni or other affinity connection to the specific college or university. Governing boards for public institutions take a variety of forms, and can include political appointments made by governors, elected governing board members who are selected through a general election, or governing board members who control multiple campuses or institutional sites. In the case of governing boards that oversee multiple campuses, the board or system executives may set policy that affects processes, procedures, or ACAP or SLC behaviors across multiple campuses or an entire higher education system.

Governing boards are not the only actors who affect outcomes, processes, and policies at public institutions. State accountability initiatives can also create mandates or performance funding incentives that disproportionately affect state institutions and may be tied to either inputs or institutional outputs (Bogue & Johnson, 2010; Dougherty & Reddy, 2011).

Carnegie Classification. Carnegie Classification is included as a control variable due to both the duration of time over which the classification system has been in use, as well as because the classifications are regularly "invoked as a way to represent differences in institutional mission" (McCormick, Pike, Kuh, & Chen, 2009, p. 145). The classification system was first developed in 1970, and has been regularly refined and updated throughout the ensuing decades (McCormick & Zhao, 2005). In addition, the classification system has consistently been managed and updated by a neutral independent party, who operates free from the commercial considerations of the widely known rakings publications.

Despite the widespread use of the Carnegie Classification categories in research, however, McCormick, Pike, Kuh, and Chen (2009) offered that between-institution heterogeneity in the Carnegie Classification system necessitates that care is taken not to inappropriately collapse or group institutions. Such care was also taken in reporting the results of this study.

Unit of Analysis

Individual higher education institutions are the unit of analysis for this study. However, ACAP and SLC measures were determined using individual responses to survey instruments from multiple respondents in each participating institution. Because individual institutions may have multiple respondents, this study incorporated decision rules on retaining responses for analysis from the respondent with the most proximate connection to SEM activities and outcomes.

Hypotheses

This study's hypothesis is that key SEM outcomes associated with admissions and enrollment improve as ACAP and SLC behaviors increase across SEM units. The intentional, focused coordination and information-sharing behaviors associated with ACAP, and organizational learning and improvement associated with SLC, lend themselves to fostering a task environment that is information-rich and provides opportunities to increase both efficiency and coordination in support of student recruitment and yield activities. Specific hypotheses include:

H1: Higher levels of specific Absorptive Capacity (ACAP) behaviors are associated with higher performance outcomes in key indicators of SEM success in recruitment and enrollment.

H2: Higher levels of Strategic Learning Capability (SLC) behaviors are associated with higher performance outcomes in key indicators of SEM success in recruitment and enrollment.

Sources of Data

Data for this study come from survey responses by respondents at four-year institutions of higher education based in the United States. In addition to data gathered from survey responses, additional data is incorporated into the dataset used for this study from publicly available data stores at the National Center for Education Statistics, available through the Integrated Postsecondary Education Data System (IPEDS) Data Center.

IPEDS Data Center

IPEDS is a nationally-administered data collection program that collects information annually from "all providers of postsecondary education in fundamental areas such as enrollment, program completion and graduation rates, institutional costs, student financial aid, and human resources" (NCES, 2015, p. 2). IPEDS hosts an online data center, which includes a web-based interface that allows researchers (or the public) to download data hosted in IPEDS.

Higher Education Directory

The *Higher Education Directory* produced by Higher Education Publications (https://www.hepinc.com/) is a directory of professionals in higher education, including contact information. The directory is available in print and online, and its content is also available to members of the higher education community through licensed data extracts. As of January 2016, there were 87,995 total records of individuals available.

Sample Selection

This study employed quantitative methods and cross-sectional survey-based data collection techniques to ascertain the presence of ACAP and SLC behaviors in SEM units at participating four-year institutions (Frankael & Wallen, 2003). Participants were recruited using contact data available in the *Higher Education Directory* (HED) available from Higher Education Publications.

This study aimed to recruit a minimum of 250 "willing and available" participants from a minimum of 77 different institutions of higher education, a convenience sample (Creswell, 2007, p. 149). Recruiting 250 participants from a minimum of 77 institutions ensured that this study exceeded the 30-participant minimum suggested by Fraenkel and Wallen (2003) for correlational studies (p. 345).

A power analysis was conducted using G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) to determine the required sample size for the study. The number of predictors is three, and the total number of possible predictors (i.e., covariates) is five. This information was entered into the power analysis. The following parameters were set: (a) power was set at .80, (b) effect size was set to medium, f^2=.15, and (c) significance set at $p < .05$. Results showed that a sample size of 77 was required.

Invitations to participate were sent via e-mail to individuals listed at four-year colleges and universities in the Higher Education Directory. Special-focus institutions (SFI) were deemed outside the scope of this study, and efforts were made to remove potential SFI participants from the invitation list. At the close of the administration window, 586 participants had completed the study, with participants representing a total of 458 institutions.

Institutional participants included those listed in the HED with the following job classifications (Manpower job designation codes appear in parentheses):

- Chief Academic Officer (MPC 05)
- Director of Admissions (MPC 07)
- Chief Public Relations Officer (MPC 26)
- Chief Student Life Officer (MPC 32)
- Director, Student Financial Aid (MPC 37)
- Director, Enrollment Management (MPC 84)

In addition, the data file selection criteria requested only four-year, non-profit institutions. As of July 2016, there were 9,125 records in the Higher Education Directory file meeting the foregoing criteria. Participants were contacted by e-mail, at the e-mail address listed in Higher Education Directory, with an invitation to participate in the survey sent using the survey e-mail tool within the Qualtrics survey administration suite. The URL for survey participation, linked from within the e-mail, was customized to the user and enabled pre-population of fields within the survey for ease of completion, which eased respondent identification, and minimized survey fatigue (Fulton, 2016).

Participation Incentive

Participants could opt in to a drawing for one of twelve gift cards to Amazon.com in the amount of $50. Although the initial invitation for the survey indicated that up to five gift cards would be awarded, the number of gift cards awarded was increased commensurate with the number of participants, to maintain 1:50 probability of being selected to receive the participation incentive.

Instrumentation

Fraenkel and Wallen (2003) recommended that "[w]henever possible, existing instruments should be used in a study" (p. 606). In alignment with this recommendation, I have

adapted Flatten, Engelen, Zahra, and Brettel's (2011) absorptive capacity scales for the higher education enrollment management context, specifically for this study. Further, I have also adapted Anderson, Covin, and Slevin's (2009) strategic learning capability scales for this study. In addition, the language in some of the survey items has been modified to make the survey easier to understand for a higher education audience. The items from both the absorptive capacity scales and the strategic learning capability scales were provided to participants in a single, unified online survey.

Building on Zahra and George's (2002) dimensions of ACAP, Flatten, Engelen, Zahra, and Brettel (2011) developed a series of scales that can be used in a variety of business contexts to measure ACAP behaviors. These scales focus on specific behaviors in the categories of knowledge acquisition, assimilation, transformation, and exploitation. Responses to individual items within the instrument dimensions (knowledge acquisition, assimilation, transformation, and exploitation) were aggregated into summed scores for each dimension and into a total ACAP score (Creswell, 2007).

In discussing the limitations of online surveys, Evans and Mathur (2005) observed that online surveys may be perceived as impersonal, and that response integrity may be compromised because participants cannot ask questions of the researcher. To respond to this concern, and further ensure face validity, the survey instrument was reviewed in interviews with five professionals practicing in admissions, marketing, or enrollment management areas of higher education organizations. These interviews took place prior to the launch of the survey administration.

Data Collection

The survey was administered via an online survey tool. Invitees received up to five e-mail invitations – with unique invitation URLs – to participate during a scheduled administration window of six weeks. Benefits of web-based administration include lower cost, and the feasibility of a single researcher administering the study (Fraenkel & Wallen, 2003). According to Evans and Mathur (2005) additional benefits of web-based surveys include the ease of data entry, flexibility, and speed of responses from a global or national audience. All invitations to participate included one-click links that allowed recipients to stop receiving messages immediately. The landing page for the survey website included an informed consent statement, explained the voluntary nature of the study, and asked for individual consent to proceed. In the case of participants who indicated no consent, their participation was terminated and they did not proceed past the informed consent page to the survey instrument.

Internal Validity

Care was taken to minimize threats to internal validity including subject characteristics, mortality, instrumentation threats, subject attitude, implementation and other potential threats (Fraenkel & Wallen, 2003, p. 191). This study was particularly susceptible to participant mortality because invitees could choose not to participate. Thus, the study offered a participation incentive to encourage completion of the survey. The participation incentive also responded to a key subject characteristic: the career level and busy nature of the lives of invitees. Senior enrollment officers, chief admissions officers, and others invited to participate are very busy individuals, and there is low return on the investment of time that these individuals are being asked to invest in the survey that is part of this study. Instrumentation threats were attenuated to the degree possible, by leveraging and adapting questions that had successfully been utilized in

published studies, and rigorous testing of both the online survey platform and the responses of participants who were part of initial cognitive interviews.

Data Analysis

Analysis was conducted in SPSS to determine the associations between SLC and ACAP, and the outcome variables, also controlling for the effects of additional control variables obtained from publicly available data sources. These control variables included institutional wealth, size, selectivity, public/private control, and Carnegie Classification. Analysis as part of this study utilized multiple linear regression models. Regression models are an optimal technique to ascertain the specific relationships between the outcomes (DVs) and the ACAP and SLC dimensions (IVs) measured in the survey instrument.

Descriptive statistics were first presented, both related to individual participants who participated in the study, and the institutions at which they are employed. Analyses were conducted to explore individual IV categories that corresponded to each of the survey item response groupings. An analysis of the joint interaction of the IVs was conducted using a linear regression to identify potential issues with multicollinearity (Aikin, West, & Reno, 1991). Variance inflation factor (VIF) scores were recorded. Exploratory factor analysis was conducted to determine which survey instrument items fit together, and individual factor regression values were stored in SPSS in individual variable fields.

Finally, pairs of regressions were utilized to identify the association between the predictors (independent variables) and the institution-level outcomes. Necessary statistical output was recorded, including coefficient, regression model summary information, and significance.

Limitations

The sampling in this study, with recruitment of willing participants, will potentially limit the generalizability of the results of this study. As an exploratory study into the effect of ACAP on admissions outcomes, this study represents a good first step, but I am aware that additional studies will be necessary to enhance generalizability within the higher education industry. Participant responses may also be skewed by social desirability bias, or the tendency to "[make] oneself look good in terms of prevailing cultural norms when answering to specific survey questions" (Krumpal, 2013, p. 2028). In this case, the effects of social desirability bias may be magnified because of respondents wanting not only to please their supervisors by answering correctly, but also to make their own institution – or SEM unit – appear favorably in a survey administered to multiple institutions. Participation in the survey itself may have been limited by the perception that the invitation to participate was junk mail or internet spam; participants may have deleted the invitation to participate without even reading it, ending their participation before they even clicked through to the survey landing page.

In addition to sampling limitations, this study also is limited by the use of cross-sectional data to investigate a phenomenon that may have been better explored through the use of longitudinal data, allowing for a pre-/post- comparison. The cross-sectional data obtained in this study allowed inferences to be made based on the perceptions of respondents about their institution's practices, but did not capture changes (or perceived changes) in ACAP and SLC over time. The use of cross-sectional data did, however, permit the exploration of the relationship between SLC/ACAP and outcome variables.

Finally, this study's design assumes that respondents can accurately assess the extent to which their institutions engage in ACAP and SLC behaviors. Respondents were asked to share information about their level of knowledge and experience with enrollment management issues

on their campus, but respondents may vary considerably in their knowledge of admissions and recruitment, as well as their ability to consider the ways in which their institutions engage in ACAP and SLC behaviors. In addition, respondents may vary in their subjective interpretation of the response scale.

Trustworthiness and Ethics

Ensuring trustworthiness in research is crucial. I conducted cognitive interviews using Flatten, Engelen, Zahra, and Brettel's (2011) scales with an audience that has familiarity with higher education administration. This research project also was carried out in accordance with proper protocols, procedure, and ethical considerations detailed in relevant inquiry coursework at the IU School of Education as well as policies of the IU Human Subjects Committee. Further, I obtained Human Subjects Committee/IRB approval before conducting this research.

Researcher Bias

In addition to pursuing a doctoral degree with a minor in Strategic Management and Organizational Theory in the Department of Management and Entrepreneurship at Indiana University's Kelley School of Business, I have also held employment at the Kelley School of Business since August 2009. Business schools often embrace business practices and tactics more readily than other units within institutions of higher education, and my comfort with the Kelley School likely played a role in my selection of the Strategic Management and Organizational Theory minor. Peer critiques of the focus of this study have in the past included concerns that identifying or promoting business practices in general, and ACAP specifically, amount to an endorsement of academic capitalism – and the attendant "market and market-like behaviors" – or the wholesale endorsement of bringing business practices into higher education (Slaughter & Leslie, 2001).

Summary

Following the literature review in Chapter Two, this chapter set forth the methods that were used to conduct the study, including a review of the research question, hypothesis, and variables. Next, the chapter provided detail on the third-party Higher Education Directory, which was utilized as a source of participants at institutions of higher education throughout the United States. This chapter also provided an overview of the instrumentation used, data collection methods, and analytic technique.

CHAPTER FOUR: FINDINGS

With increases in accountability and scrutiny, institutions of higher education are increasingly required to demonstrate their effectiveness (Burke, 2004). Additionally, Kirp (2004) and others have documented the increasing marketization of higher education. Marketing firms advise college and university administrators, with deep granularity and high specificity, when and how individual messages are likely to be read by prospective students (Koppenheffer, 2016). Further, colleges and universities are on notice that "public institutions need to be more strategic than ever before about enrollment management" (Pelletier, 2016, p. 1). The conceptual framework of this study offers that two constructs, absorptive capacity (ACAP) and strategic learning capability (SLC), will have relationships with outcomes in SEM.

Although the roles of ACAP and SLC and their relationships to organizational performance, innovation, and competitive advantage have been extensively studied within strategic management literature, less exploration has occurred with ACAP and SLC within the context of higher education. This study addresses a gap in the higher education literature by exploring key strategic management frameworks with marketing and recruitment efforts in institutions of higher education (IHEs). The overarching goal of this study was to investigate the relationship between the presence of ACAP and SLC behaviors in marketing and admissions within IHEs and to assess an IHE's ability to improve performance measures in admissions and enrollment (including yield, application counts, test scores, and applicant mix).

The purpose of this chapter is to present and discuss findings, both descriptive and inferential, from statistical analyses. The chapter opens with a restatement of the research questions and the data collection methods. The review of data collection methods will include information on invitation messages and procedures, overall survey response, the composition of

the analysis file, and handling of missing data. Subsequent to these reviews are presentations of descriptive findings on both the IHEs and IHE-based participants who completed the survey. Exploratory factor analysis was used to assess the fit of the scale items and produced factor loadings for the dimensions of ACAP and SLC. This chapter then presents detailed information, including Cronbach's alpha, regarding inter-item reliability within the item sets in the survey instrument. Next, regression output, including coefficients and model summary information, is presented on each of the multiple linear regressions that were conducted for the dependent variables. A summary of results is presented for each of the three research questions, and highlights statistically significant findings.

Review of Research Questions

This study explores how strategic activities, specifically absorptive capacity (ACAP) and strategic learning capability (SLC), increase effectiveness of SEM units and aligned areas (e.g., admissions, financial aid, and marketing) as reflected by the selected outcome measures. This study had one overarching question: *To what extent are ACAP and SLC behaviors associated with improved outcomes in recruitment and enrollment at four-year institutions?*

Within the scope of the overarching question above, the study specifically investigated the following research questions:

RQ 1. To what extent are ACAP behaviors associated with higher performance on key indicators of SEM success in recruitment and enrollment?

RQ 2. To what extent are SLC behaviors associated with higher performance on key indicators of success in recruitment and enrollment?

RQ 3. To what extent are ACAP behaviors perceived by higher education leaders to positively impact a given IHE's key outcomes in recruitment and enrollment?

Data Collection Methods

Invitations to participate were sent via e-mail to a list of higher education professionals acquired under a license purchased from Higher Education Directory. The list of participants included recipients with the following job titles and classifications:

- Chief Academic Officer (MPC 05)
- Director of Admissions (MPC 07)
- Chief Public Relations Officer (MPC 26)
- Chief Student Life Officer (MPC 32)
- Director, Student Financial Aid (MPC 37)
- Director, Enrollment Management (MPC 84)

Prior to launching the web-based survey, a request for a data file was sent to Higher Education Directory, with the following filter criteria specified (each bullet point entry represents the *inclusion* of specified data unless otherwise noted):

- Institutions: Four-Year Colleges and Universities
- Highest Degree Offering
    - Baccalaureate Degree
    - First Professional Degree
    - Master's Degree
    - Beyond Master's But Less Than Doctorate
    - Doctorate
- 2015 Carnegie Classification
    - Exclude all associate's colleges

    - Exclude all special-focus two-year institutions
    - Exclude special focus four-year Faith-Based institutions
- IRS Status
    - Include non-proprietary institutions
    - Exclude all proprietary institutions

First Invitation (July 19, 2016)

The initial invitation was sent to 9,125 participants at 1,862 unique institutions on July 19, 2016. (See *First Invitation to Participate,* Appendix C.) Up to six administrators at each institution may have been contacted. The institutions met the selection criteria for the data file referenced in the preceding section. Completed responses were received from 291 participants from 248 institutions between July 19 and July 24.

Second Invitation (July 25, 2016)

As part of this study's efforts to gain responses, a second invitation to participate was sent on July 25, 2016 to 8,723 addresses. These addresses were from the original list of 9,125 possible participants in the Higher Education Directory data file. Qualtrics, the electronic survey tool, removed from this distribution any members of the original 9,125 invitees who had already completed the survey and those recipients who had opted out of receiving invitations to participate. Between July 25 and August 2, 197 surveys were completed (from individuals at185 institutions). After the first and second invitations, the survey had been completed by 488 participants from 408 unique institutions.

Endorsement of Study and Targeted Invitations

After the initial wave of invitation e-mails, this study received the endorsement of the Center for Enrollment Research, Policy, and Practice (CERPP) at the University of Southern

California, in the form of a written letter of endorsement. The authors of the endorsement letter suggested that the letter could be helpful in attracting additional admissions and enrollment management professionals to participate in the study. The original invitation to participate was modified to include a link to view the CERPP endorsement letter as a web-based PDF document contained within the Qualtrics system, and was re-sent to participants listed in the Higher Education Directory file as Director of Admissions (MPC 07) or Director of Enrollment Management (MPC 84). (See *Second Invitation to Participate,* Appendix D.)

The revised invitation – with CERPP's endorsement – was transmitted on August 3, 2016 to a total of 1,979 recipients in the Director of Admissions and Director of Enrollment Management job classifications. (See *Letter of Endorsement,* Appendix E.) These 1,979 e-mail addresses were segmented from the 9,125 e-mail addresses in the HED data file used in earlier distributions (and accounted for removing participants in the specified job classifications who had already completed the survey). A total of 49 respondents, from 49 unique institutions, completed the survey in response to the August 3 invitation. A final e-mail to optimize participant response rate and institution type was sent on August 9, 2016, resulting in an additional 49 survey completions (from 46 institutions).

Overall Survey Response

A total of 586 responses were collected, representing individuals at 458 unique institutions, yielding an overall response rate of 6.4% for participants and 25% for institutions invited to participate. At some institutions, internal communication and coordination took place to determine who would complete the survey on behalf of the institution. In some cases, for example, invitees replied with messages that redirected the invitation to a designated individual. These processes of internal delegation help to account for the low individual response rate.

Integration of Participants and IHE Data Files

Participant data were merged into one SPSS study dataset with IHE data from the Integrated Postsecondary Education Data System (IPEDS) and data from the Higher Education Directory (HED). Elements of the licensed HED data extract file (including unique participant HED identification number, institution IPEDS Unit ID, Carnegie Classification, degree offering, and type of control) were uploaded into Qualtrics along with invitee data. These data were then downloaded from the survey system, and automatically embedded in participant response records upon download. Additional institution-specific data (racial make-up, application and test score data, institution-specific yield data, and enrollment data) were downloaded from IPEDS Data Center (https://nces.ed.gov/ipeds/datacenter/) consistent with IPEDS' published Public Access Policy and Privacy and Security Policies. The IPEDS-based data were linked to individual participant records by concatenating the IPEDS data to the downloaded Qualtrics survey file in Excel. A Vertical Lookup (VLOOKUP) formula keyed by unique institution Unit ID was used.

Composition of the Analysis Data File

The SPSS data file contained 586 participants from 458 unique institutions. To increase analytical robustness as well as to account for within-institution heterogeneity, decision rules were created to remove from analysis certain response cases.

Of the original participants (n = 586), 130 cases were selected for removal before additional missing data procedures and listwise deletion for most and least restricted sample sets (as described later in this chapter). The removed cases include:

- participants who indicated no experience with enrollment management issues (*n* = 16). (Low experience was derived from participants who responded indicating "no experience" to the item referenced in Table 8, Survey Item 11.)
- participants who indicated low knowledge of their institution's enrollment management goals and strategies (*n* = 9). (Low knowledge was inferred for participants who responded with a knowledge level below 4 on a 1 – 7 scale to the item in Table 7, Survey Item 10.)
- participants from Special Focus Institutions (SFIs) (n = 2), considered to be out of scope for the present study.
- additional respondents from a given institution (n = 103; see below).

In cases of multiple participants from the same institution, the following criteria were used to select the individuals who would be most likely to have knowledge of strategic enrollment goals, as well as the tactics and strategies institutions used for achieving them, in descending order:

- Senior Enrollment Officer
- Dean/Director of Admissions
- Chief Academic Officer
- Dean/Director of Student Financial Aid
- Chief Public Relations Officer
- Chief Student Life Officer
- Other

Prior to implementing this rule, efforts were made to assign appropriate title categories for study participants who selected "Other," based on write-in information supplied. In 16% of cases (*n* = 68) within the least restricted sample utilized for analysis, a position initially mapped

to “Other” due to user selection was assigned to a standard position classification. Specifically, cases were re-mapped to Senior Enrollment Officer (*n* = 25); Chief Academic Officer (*n* = 3); Chief Public Relations Officer (*n* = 18); Chief Student Life Officer (*n* = 11); Dean/Director of Admissions (*n* = 9); and Dean/Director of Student Financial Aid (*n* = 2). Only a small number of “Other” participants remained after reassignment (*n* = 8).

Computation of SAT Combined Score

SAT Verbal and Quantitative scores were sourced from IPEDS as part of a batch download that supplied other dependent variable content. For each institution where data were available, there were four SAT data points: (1) verbal 25th percentile (V_{25}); (2) verbal 75th percentile (V_{75}); (3) quantitative 25th percentile (Q_{25}); and (4) quantitative 75th percentile (Q_{75}). A variable was computed that combined the mean scores for an imputed average score as depicted below:

$$Imputed\ Institutional\ SAT = \frac{(V_{25} + V_{75})}{2} + \frac{(Q_{25} + Q_{75})}{2}$$

Missing Data

The data file was reviewed for data missing at random (MAR) and data missing not at random (MNAR). The file was reviewed in SPSS, both with manual inspections of the data file as well as with descriptive statistics output in SPSS. For the user-entered survey items, there were two cases of MNAR data, both of them in Item Set 12, the item set related to institutional goals. Analysis of this question was not included within this study, and no action was taken to mitigate the effects of this missing data, as these data did not affect findings.

Among the control variables, there were instances of missing data downloaded from IPEDS as well as from Higher Education Directory, including:

- Endowment: 18 cases
- Total Enrollment: 8 cases
- Control type: 1 case
- Selectivity: 6 cases
- Carnegie Classification: 15 cases (The Carnegie Classification was manually searched and entered for these 15 cases, resulting in 13 cases that have an updated Carnegie Classification, and 2 cases which were removed, as they are Special Focus Institutions, and not part of the scope of this study.)

Given the size of the overall sample after removal of cases highlighted above (n = 456), it was determined that the missing cases did not materially affect the overall outcome of the study.

Among the dependent variables, there were a number of cases of missing data, including:

- Non-White enrolled percentage: 5 cases
- Applicants total: 36 cases
- Admit rate: 36 cases (resultant from missing cases in Total Applicants and Total Admitted Students downloaded from IPEDS)
- Enrolled students total: 36 cases
- Yield percentage: 36 cases
- SAT Computed Score 128 cases

Listwise deletion was employed for cases where data were missing. The analysis sample differs from the overall sample, with dependent variables and associated regression analyses having a range of valid cases. After listwise deletion, the number of cases varied depending on DV, and sample sizes range from 320 (DV=Computed Mean SAT Score) to 431 (DV=Undergraduate

Non-White Enrollment Percentage). The descriptive statistics tables provide the composition for least restricted and most restricted samples.

Descriptive Statistics: IHE and Respondent Characteristics

This study collected descriptive information about IHEs and IHE representatives. As described above, listwise deletion was utilized in response to missing data in the DVs. Characteristics are therefore provided for both the most (n = 320) and least (n = 431) restricted samples utilized. A national sample is provided for comparison purposes. To present the national sample data in Tables 1 – 4, the public institution data file was downloaded from the Carnegie Classification website, and specific criteria were entered to retain or remove institutions from the file (Indiana University Center for Postsecondary Research, 2016). For Table 5, endowment data was downloaded from the IPEDS data center, with 1,485 institutions meeting the selection criteria. Specifically, selections were made for national sample data sets based on Control (include public and private nonprofit, exclude private for-profit); Region (include U.S. institutions, exclude outlying regions, including Puerto Rico); Carnegie Classification 2015 (include baccalaureate, master's, and doctoral institutions, exclude 2-year institutions and special-focus institutions). In addition, a data filter was used to only utilize cases where undergraduate enrollment, to eliminate cases where a graduate-only institution had remained in the dataset.

Percentages for the most restricted sample (% MR), least restricted sample (% LR), and national sample comparison (% NS) are indicated in the tables below.

IHE Characteristics

Data on IHE size is presented in Table 1. In the least restricted sample, 47.3% of the IHEs represented in the study had between 1,000 and 4,999 full-time undergraduate students enrolled in the institution. In contrast, only 59 (13.5%) and 33 (7.3%) of the IHEs, respectively, represented in the study had enrollments of over 20,000 students (n = 59, 13.5%) and

enrollments of under 1,000 students (*n* = 33, 7.2%). Additional information on enrollment headcount is provided in Table 1.

Compared to the national sample, institutions with fewer than 5,000 students are underrepresented in the least and most restrictive analysis samples (with approximately 52-55% versus approximately 70%).

Table 1

Institution Undergraduate Enrollment

	% MR	% LR	% NS
Under 1,000	6.6	7.3	16.6
1,000-4,999	45.3	47.3	52.6
5,000-9,999	19.4	18.8	14.3
10,000-19,999	13.1	13.2	9.8
20,000 and above	15.6	13.5	6.6
Total	100	100	100
n	320	431	1,564

Note: Details may not sum to totals due to rounding.

Data on institution control type appears in Table 2, which includes a breakdown of institutions that are private non-profit and public. This characteristic was collected, and of interest in this study, as part of an effort to account for differing admissions and marketing practices between private and public institutions. Of the institutions included in the least restricted sample, 57.8% (*n* = 249) are private institutions and 42.2% (*n* = 182) are public institutions. Institution control types in the most and least restrictive samples are represented within about +/- 5 percentage points. Private not-for-profit institutions, for example, are about 57-58% of the most and least restrictive samples, and 62.5% of the national sample.

Table 2

Institution Control Type

	% MR	% LR	% NS
Private not-for-profit	56.9	57.8	62.5
Public	43.1	42.2	37.5
Total	100	100	100
n	320	431	1,564

Note: Details may not sum to totals due to rounding.

Data on institutional Carnegie Classification appears in Table 3. Participant institutions represented a variety of Carnegie Classifications. Doctoral institutions in the least restricted sample accounted for 23.9% (*n* = 103) of those institutions represented. Master's institutions comprised 42% (*n* = 181) of institutions. Master's colleges and universities are represented in the most and least restrictive samples at a level commensurate with their representation in the national sample (approximately 41-42% versus 43.1%). Baccalaureate colleges and universities were underrepresented – and doctoral universities were overrepresented – in the most and least restricted samples.

Table 3

Carnegie Classification

	% MR	% LR	% NS
Doctoral Universities	28.1	23.9	19.6
Master's Colleges/Universities	41.3	42.0	43.0
Baccalaureate Colleges/Universities	30.6	34.1	37.3
Total	100	100	100
n	320	431	1,564

Notes: Details may not sum to totals due to rounding. The study samples include participants from institutions in the Carnegie Classification category Baccalaureate/Associate: Associate's Dominant (*n* = 5), which are included within the Baccalaureate Colleges/Universities category in Table 3. The national sample percentages do not include the "Associate's Dominant" category.

Data on institutional selectivity appears in Table 4. Institutional selectivity is an important consideration in enrollment management because institutional goals and enrollment targets (and enrollments themselves) can be affected by either an institution's current selectivity or the level of selectivity to which it aspires in a market positioning effort. In addition, the data file provided by Higher Education Directory provided each institution's Carnegie Classification 2015 undergraduate profile designation, which included selectivity information. Compared to the national sample, Inclusive institutions were underrepresented in this study and More Selective institutions were overrepresented.

Table 4

Institutional Selectivity

	% MR	% LR	% NS
Inclusive	23.4	31.3	37.2
Selective	31.3	29.2	37.0
More Selective	45.3	39.4	25.8
Total	100	100	100
n	320	431	1,564

Note: Details may not sum to totals due to rounding.

Financial resources can affect institutions in a variety of ways, including market perceptions about institutional prestige and the ability of an institution to offer financial aid. Institutions with larger endowments can offer higher amounts of both merit-based and need-based aid (Duffy & Goldberg, 1997). In addition, institutions with more financial resources can leverage financial aid as part of a tuition discounting strategy, effectively "buying" student matriculation through the issuance of a discount that is awarded as a scholarship or grant (Smith, 2015). Having more financial resources gives institutions significant flexibility in attracting

applicants. Data on endowment per full-time equivalent enrolled student are presented in Table 5.

Compared to the national sample, the most and least restrictive samples were represented within +/- 5 percentage points. Institutions with less than $25,000 endowed per student are somewhat underrepresented in this study. Institutions with $25,000 - $74,999 endowed per student were represented in the most and least restrictive samples at approximately 22-23%, and in the national sample at approximately 20%.

Table 5

Endowment per FTE

	% MR	% LR	% NS
$1 - $24,999	63.8	63.8	68.2
$25,000 - $74,999	22.4	23.2	19.7
$75,000 +	13.8	13.0	12.1
Total	100	100	100
n	320	431	1,485

Notes: Details may not sum to totals due to rounding. Values above represent amounts in U.S. Dollars ($).

Respondent Characteristics

Participants were recruited via e-mail to participate in a web-based survey, which was administered using the Qualtrics online survey suite. Table 6 provides data on the title/role of individual respondents within their IHE. In this study, the largest number of participants (in the least restricted sample) were Senior Enrollment Officers (*n* = 152, 35.2%), Deans/Directors of Admissions (*n* = 96, 22.3%), and Deans/Directors of Student Financial Aid (*n* = 63, 14.6%). Among respondents who indicated “other” as their role/title and were not assigned to one of the titles in Table 6 (*n* = 8), these roles include presidents and chancellors as well as other positions.

Table 6

Descriptive Statistics: Title/Role of IHE Respondent

	% MR	% LR
Senior Enrollment Officer	35.3	35.2
Dean/Director of Admissions	25.0	22.3
Dean/Director of Student Financial Aid	13.4	14.6
Chief Academic Officer	8.1	9.3
Chief Student Life Officer	7.2	8.8
Chief Public Relations Officer	8.8	7.7
Other	2.2	1.8
Total	100	100
n	320	431

Notes: In 68 cases (16%) within the least restricted sample, a position initially mapped to "Other" due to user selection was re-mapped to an existing position classification. Details may not sum to totals due to rounding.

In Table 7, data are presented regarding participants' level of knowledge about enrollment management activities. The survey question asked: *How much knowledge do you have about your institution's enrollment management activities (e.g., admissions, student recruitment, marketing, etc.)? (1 = very little; 7 = very much).* In the least and most restricted samples, about 84 – 88% of respondents indicated they were highly knowledgeable about their institution's enrollment management activities (with responses of 6 or 7 on a 7-point scale).

Table 7

Level of knowledge about institution's enrollment management activities

	% MR	% LR
4	4.1	5.1
5	8.4	10.7
6	16.9	16.9
7	70.6	67.3
Total	100	100.0
n	320	431

Notes: Survey response scale from 1-7 (1 = very little; 7 = very much). Respondents with knowledge levels below 4 were excluded from analysis. Details may not sum to totals due to rounding.

Data regarding participant years of experience with enrollment management are presented in Table 8. Although not shown in Table 8, participants with no experience (n = 16) were removed from the analysis file. In the least and most restricted samples, about 84-87% of respondents indicated 7 or more years experience working with enrollment management, admissions, or marketing activities in higher education.

Table 8

Years of experience working with enrollment management, admissions, or marketing activities in higher education

	% MR	% LR
Less than 3 years	3.6	4.9
3-6 years	9.4	10.7
7-9 years	10.6	11.4
10 or more years	76.4	73.1
Total	100	100
n	320	431

Notes: Participants with no experience (n = 16) were excluded from analysis. Details may not sum to totals due to rounding.

Descriptive Statistics: Dependent Variables

Table 9 provides descriptive statistics for the dependent variables in this study, including mean, standard deviation, minimum, and maximum. Missing cases are excluded and counts (N) are shown for each DV.

Table 9

Descriptive Statistics of Dependent Variables

	N	Minimum	Maximum	Mean	Std. Deviation
Undergraduate Non-White (%)	431	10	100	38.13	20.33
2014 Applicants Total	405	7	86,537	7224.78	10,403.54
2014 Admit Rate (%)	405	10.37	100	65.51	18.20
2014 Enrolled Total	405	5	10,835	1223.70	1,525.06
Admissions Yield (%)	405	9.0	86	31.84	13.68
SAT Score – Computed	320	722.5	1494	1061.95	125.86

Note: Values shown represent a percentage value when DV title includes (%) notation.

Exploratory Factor Analysis of Survey Items

Exploratory factor analysis was conducted on 26 survey items from six item sets that appeared on the survey administered to participants. Although scale reliability analysis was conducted on each of the item sets, factor analysis with principal components analysis (PCA) was conducted to further explore the factorability of the items.

Output from an exploratory factor analysis conducted with the least restricted dataset (DV=Undergraduate non-White Percentage) was reviewed, including the correlation matrix of all 26 items. Several criteria were used for initial evaluation of factorability (Neill, 2008). An initial review of correlation values showed that each item correlated at least 0.3 with another item. The Kaiser-Meyer-Olkin measure of sampling adequacy was .925, exceeding the recommended value of 0.6 (Neill, 2008). Bartlett's test of sphericity also was significant (x^2 (325) = 9177.70, $p < .01$). Of the 26 items, no communalities were lower than 0.4.

Initial eigenvalues were examined, with the first four factors accounting for 42.8%, 10.8%, 7.1%, and 5.9% of variance respectively, and cumulatively accounting for 66.7% of

variance. The remaining three factors had eigenvalues between 1.2 and 1.5 and explained 4 – 6% of variance each.

Of the 26 items included in the exploratory factor analysis, all were identified as part of one of the six factors through a varimax rotated components matrix (See Appendix G). To account for cross-loading, and since several items had loadings of at least 0.3 on multiple factors, a higher 0.50 loading was used as the threshold for factor loading on the items where cross-loading was possible (Costello & Osborne, 2005). Individual factor loadings are presented in Appendix G.

Factor labels were chosen to be consistent with the constructs examined in this study, and the questions included in the survey administered to participants. The six factors are: Strategic Learning Capability; ACAP – Acquire; ACAP – Assimilate; ACAP – Transform; ACAP – Exploit; and ACAP – Integrated Perception. Overall, factor analysis indicated the appropriateness of grouping the original items together.

Scale scores were developed for each factor, computed by taking the mean of the items in each set. Descriptive statistics on each of the scale item sets are shown in Table 10.

Table 10

Descriptive Statistics of Scale Scores

	Mean	Min.	Max.	SD
Strategic Learning Capability	4.66	1	7	1.30
ACAP – Acquire	4.77	1	7	1.12
ACAP – Assimilate	4.76	1	7	1.33
ACAP – Transform	5.33	1	7	1.09
ACAP – Exploit	4.94	1	7	1.24
ACAP – Integrated Perception	5.11	1	7	1.09

Internal consistency of each scale was determined by the calculation of Cronbach's alpha. All of the scales have good internal consistency, as shown in Table 11, with ACAP – Acquire having the lowest Cronbach's alpha (α = .802) and Strategic Learning Capability having the highest (α = .931).

Table 11

Scale Reliability Analysis

	α	Mean	N of items
Strategic Learning Capability	.931	27.956	6
ACAP – Acquire	.802	19.097	4
ACAP – Assimilate	.921	19.025	4
ACAP – Transform	.926	21.301	4
ACAP – Exploit	.924	19.749	4
ACAP – Integrated Perception	.902	20.438	4

Bivariate Correlation of Strategic Learning Capability, Absorptive Capacity, and Dependent Variables

A bivariate correlation matrix that included both the independent and dependent variables was produced and analyzed, to assess the correlation between strategic learning capability, absorptive capacity, and the dependent variables in the study. Correlations between ACAP dimensions and Strategic Learning Capability are overall quite robust, with a range between 0.4 and 0.6. The total number of applicants is the only dependent variable with statistically significant correlations with Strategic Learning Capability (r = .178, $p < .001$) as well as all of the Absorptive Capacity dimensions. Table 12 presents the full correlation matrix.

Table 12

Bivariate Correlation of Strategic Learning Capability, Absorptive Capacity, and Dependent Variables

	1	2	3	4	5	6	7	8	9	10	11
(1) Strategic Learning Capability											
(2) ACAP-Acquire	.400										
(3) ACAP-Assimilate	.526	.344									
(4) ACAP-Transform	.473	.513	.447								
(5) ACAP-Exploit	.609	.415	.505	.434							
(6) ACAP-Integrated Perception	.401	.463	.310	.565	.422						
(7) Undergrad. Non-White (%)	*.069*	*.048*	*.049*	*.018*	*-.009*	*.002*					
(8) Total Number of Applicants	.178	.136	.188	.105	.149	.110	.170				
(9) Admit Rate (%)	-.153	*-.031*	-.171	-.098	*-.052*	*-.011*	-.302	-.329			
(10) # of Students Who Enrolled	.114	.132	.161	.110	.140	.114	*.029*	.789	-.041		
(11) Yield Rate (%)	-.125	*-.089*	*-.068*	*-.071*	*-.033*	-.108	*-.033*	*-.073*	*-.008*	.156	
(12) Mean SAT Score	.132	.204	*.100*	.124	.150	*.093*	-.125	.458	-.380	.337	*-.034*

Note: All correlations significant, $p < .05$ (2-tailed), except when presented in *italics.*

Test of Normality of Distribution Within Independent Variables

In preparation for analysis and to test the assumption of normality of distribution of independent variables, descriptive statistics and frequency distributions were reviewed to determine skewness. In several cases, the skewness value was determined to be less than -.50, but in no cases was it less than -.55. Normal P-P plots were reviewed, and there was no substantial deviation from normality. In response to this potential skewness, though, both histogram plots of the independent variables as well as frequency distributions were reviewed to determine the origins of skewness. Upon examination, it was determined that skewness resulted

from far fewer individuals indicating “Very Little” as a response on the 1 – 7 scale than indicated “Very Much” or other upper-range responses. This slight departure was determined to be acceptable given the large sample number of respondents, and the fact that the skewness was not severe.

Test for Multicollinearity

Linear regressions were conducted on scale scores to assess multicollinearity. All of the independent variables that would be loaded into the regression model ultimately intended to test for relationships between ACAP/SLC and admissions outcomes were first placed into a linear regression model, with each variable being rotated into the dependent variable field within SPSS Statistics, to determine variable inflation factors (VIF) for each IV.

Collinearity diagnostics show low VIF across regressions for all scales, as shown in Table 13.

Table 13

Collinearity Statistics: Based on Scale Score for SLC and ACAP Dimensions

	Collinearity Statistics	
Included as Regression DV	Range of Tolerance	Range of Variance Inflation Factors
Strategic Learning Capability	.539 - .635	1.574 – 1.816
ACAP – Acquire	.685 - .783	1.277 – 1.461
ACAP – Assimilate	.636 - .678	1.474 – 1.571
ACAP – Transform	.621 - .706	1.416 – 1.610
ACAP – Exploit	.559 - .660	1.516 – 1.788

Multivariate Analysis (RQ 1 and 2)

To respond to research questions 1 and 2, multiple regression analysis was conducted to explore all four dimensions of ACAP, as well as SLC, with one pair of regression models for

each outcome variable. The control variables of endowment, enrollment headcount, Carnegie classification, control type, and selectivity were entered for the base model. Variables containing actual values (divided by 1,000) were used for endowment per FTE and size (total enrollment). Dummy variables were utilized for Carnegie classification (with master's as reference category); control type (with public as reference category); and selectivity (with inclusive as reference category). For the full model, five variables containing scale scores were added (each of the four ACAP dimensions as well as SLC).

This study's hypothesis is that key indicators associated with admissions and enrollment improve as ACAP and SLC behaviors increase across SEM units. Specific hypotheses include:

H1: Higher levels of specific Absorptive Capacity (ACAP) behaviors are associated with higher performance outcomes in key indicators of SEM success in recruitment and enrollment.

H2: Higher levels of Strategic Learning Capability (SLC) behaviors are associated with higher performance outcomes in key indicators of SEM success in recruitment and enrollment.

The results tables display two-tailed significance for control variables, and one-tailed significance for strategic learning capability (SLC) and absorptive capacity (ACAP) values in the full model. One-tailed p-values are appropriate because the hypotheses in this study involve directional effects for SLC and ACAP.

Regression Analysis: Total Number of Applicants

The base model was significant and accounted for 63.7% of the variance of total number of applicants. The full model, which added the ACAP and SLC dimensions as predictors, resulted in a significant improvement in explanatory power (R^2_{change} = .014).

SLC had a positive relationship with the total number of applicants, β = .072, *p* = .043 (one-tailed). ACAP Acquire behaviors approached significance (*p* < .1), β = .057, *p* = .062 (one-tailed). ACAP Assimilate behaviors also approached significance, β = .063, *p* = .050 (one-tailed). Full details appear in Table 14.

Table 14

Regression Analysis: Total Number of Applicants

	Base Model				Full Model			
	B	**SE**	**β**	**Sig.**	**B**	**SE**	**β**	**Sig.**
(Constant)	-704.191	865.352		0.416	-4742.161	1933.238		0.015 *
Endowment (1000s)	0.777	2.972	0.009	0.794	0.533	2.965	0.006	0.857
Enrollment (1000s)	662.097	42.276	0.703	0.000 ***	651.177	42.248	0.692	0.000 ***
Carnegie Bacc.	205.096	796.569	0.009	0.797	264.433	794.906	0.012	0.740
Carnegie Doctoral	871.027	1002.426	0.036	0.385	1064.864	998.587	0.044	0.287
Private	357.207	804.813	0.017	0.657	412.827	802.826	0.020	0.607
Selective	110.588	795.200	0.005	0.889	69.422	789.783	0.003	0.930
More Selective	5173.234	949.464	0.230	0.000 ***	4885.645	940.832	0.218	0.000 ***
SLC					580.106	337.257	0.072	0.043 *
ACAP - Acquire					530.934	344.796	0.057	0.062 +
ACAP - Assimilate					494.996	299.740	0.063	0.050 +
ACAP - Transform					-562.774	365.878	-0.059	0.938
ACAP - Exploit					-88.605	335.462	-0.011	0.604
R^2	0.637				0.651			
F	99.534 ***				60.831 ***			
F_{change}					3.049 *			

*+p < .10; *p < .05; **p < .01; ***p < .001*

Notes: N = 405. Significance levels for control variables in both models reflect two-tailed tests. Significance levels for SLC and ACAP predictors reflect one-tailed tests, where positive coefficients correspond to the hypothesized relationship.

Regression Analysis: Admit Rate Percentage

The base model for the admit rate was significant and accounted for 17.5% of the variance. The full model resulted in a significant improvement in explanatory power (R^2_{change} = .035).

SLC had a statistically significant, negative association with admit rate percentages, β = -0.113, *p* = .037 (one-tailed). ACAP Assimilate behaviors also had a statistically significant, negative association with admit rate percentages, β = -0.161, *p* = .003 (one-tailed). Full details appear in Table 15.

Table 15

Regression Analysis: Admit Rate Percentage

	Base Model				Full Model			
	B	**SE**	**β**	**Sig.**	**B**	**SE**	**β**	**Sig.**
(Constant)	72.699	2.283		0.000***	78.976	5.085		0.000***
Endowment (1000s)	-0.048	0.008	-0.315	0.000***	-0.048	0.008	-0.314	0.000***
Enrollment (1000s)	-0.239	0.112	-0.145	0.033*	-0.190	0.111	-0.116	0.087+
Carnegie Bacc.	-3.552	2.101	-0.092	0.092	-3.066	2.091	-0.080	0.143
Carnegie Doctoral	-2.326	2.644	-0.055	0.380	-2.886	2.627	-0.068	0.273
Private	-4.051	2.123	-0.109	0.057+	-4.072	2.112	-0.110	0.055+
Selective	3.622	2.098	0.098	0.085+	4.109	2.077	0.111	0.049*
More Selective	-0.144	2.505	-0.004	0.954	0.346	2.475	0.009	0.889
SLC					-1.592	0.887	-0.113	0.037*
ACAP - Acquire					1.004	0.907	0.061	0.366
ACAP - Assimilate					-2.223	0.788	-0.161	0.003**
ACAP - Transform					-0.202	0.962	-0.012	0.417
ACAP - Exploit					1.465	0.882	0.101	0.451
R^2	.175				.210			
F	12.009***				8.688***			
F_{change}					3.507**			

*+p < .10; *p < .05; **p < .01; ***p < .001*

Notes: N = 405. Significance levels for control variables in both models reflect two-tailed tests. Significance levels for SLC and ACAP predictors reflect one-tailed tests, where negative coefficients correspond to the hypothesized relationship.

Regression Analysis: Number of Students Who Enrolled

The base model was significant and accounted for 88.4% of the variance of number of students who enrolled. The full model resulted in a significant improvement in explanatory power (R^2_{change} = .006).

Increased ACAP Acquire behaviors were associated with increased numbers of enrolled students, β = .065, *p* = .001 (one-tailed). ACAP Exploit approached significance, β = .031, *p* = .087 (one-tailed). Additional details appear in Table 16.

Table 16

Regression Analysis: Number of Students Who Enrolled

	Base Model				Full Model			
	B	**SE**	**β**	**Sig.**	**B**	**SE**	**β**	**Sig.**
(Constant)	112.953	71.634		0.116	-386.251	159.199		0.016*
Endowment (1000s)	-0.133	0.246	-0.010	0.589	-0.220	0.244	-0.017	0.368
Enrollment (1000s)	115.688	3.500	0.838	0.000***	115.330	3.479	0.836	0.000***
Carnegie Bacc.	172.145	65.940	0.053	0.009**	203.422	65.459	0.063	0.002**
Carnegie Doctoral	68.358	82.981	0.019	0.411	89.488	82.232	0.025	0.277
Private	-404.557	66.622	-0.130	0.000***	-390.687	66.111	-0.126	0.000***
Selective	259.521	65.827	0.084	0.000***	260.010	65.037	0.084	0.000***
More Selective	558.998	78.597	0.170	0.000***	535.482	77.476	0.163	0.000***
SLC					-8.269	27.773	-0.007	0.617
ACAP - Acquire					88.852	28.393	0.065	0.001**
ACAP - Assimilate					13.676	24.683	0.012	0.290
ACAP - Transform					-27.398	30.129	-0.020	0.818
ACAP - Exploit					37.690	27.625	0.031	0.087+
R^2	.884				.890			
F	433.27***				263.61***			
F_{change}					3.905**			

*+p < .10; *p < .05; **p < .01; ***p < .001*

Notes: N = 405. Significance levels for control variables in both models reflect two-tailed tests. Significance levels for SLC and ACAP predictors reflect one-tailed tests, where positive coefficients correspond to the hypothesized relationship.

Regression Analysis: Yield Rate Percentage

The base model was significant and accounted for 21.3% of the variance in institutional yield rate. The full model resulted in a significant improvement in explanatory power (R^2_{change} = .023). ACAP Exploit approached statistical significance, β = .095, *p* = .056 (one-tailed). Additional details appear in Table 17.

Table 17

Regression Analysis: Institutional Yield Rate Percentage

	Base Model				Full Model			
	B	**SE**	**β**	**Sig.**	**B**	**SE**	**β**	**Sig.**
(Constant)	38.161	1.676		0.000***	46.642	3.759		0.000***
Endowment (1000s)	0.033	0.006	0.291	0.000***	0.035	0.006	0.302	0.000***
Enrollment (1000s)	0.138	0.082	0.111	0.093+	0.151	0.082	0.122	0.067+
Carnegie Bacc.	1.128	1.543	0.039	0.465	0.974	1.546	0.034	0.529
Carnegie Doctoral	0.143	1.942	0.005	0.941	-0.017	1.942	-0.001	0.993
Private	-9.270	1.559	-0.333	0.000***	-9.410	1.561	-0.338	0.000***
Selective	-2.982	1.540	-0.107	0.054+	-2.866	1.536	-0.103	0.063+
More Selective	-9.165	1.839	-0.311	0.000***	-8.797	1.830	-0.298	0.000***
SLC					-0.851	0.656	-0.080	0.903
ACAP - Acquire					-1.074	0.671	-0.087	0.945
ACAP - Assimilate					-0.766	0.583	-0.074	0.905
ACAP - Transform					-0.191	0.712	-0.015	0.606
ACAP - Exploit					1.037	0.652	0.095	0.056+
R^2	.213				.236			
F	15.310***				10.096***			
F_{change}					2.415*			

*+p < .10; *p < .05; **p < .01; ***p < .001*

Notes: N = 405. Significance levels for control variables in both models reflect two-tailed tests. Significance levels for SLC and ACAP predictors reflect one-tailed tests, where positive coefficients correspond to the hypothesized relationship.

Regression Analysis: Mean Computed SAT Score

The base model was significant and accounted for 76.6% of the variance of Mean SAT score. The full model did not significantly add explanatory power. Nevertheless, ACAP Acquire had a statistically significant relationship with the computed mean SAT score, β = .071, *p* = .019 (one-tailed). Additional details appear in Table 18.

Table 18

Regression Analysis: Mean SAT Score

	Base Model				Full Model			
	B	**SE**	**β**	**Sig.**	**B**	**SE**	**β**	**Sig.**
(Constant)	918.406	9.576		0.000***	866.262	21.923		0.000***
Endowment (1000s)	0.275	0.030	0.281	0.000***	0.267	0.030	0.272	0.000***
Enrollment (1000s)	1.560	0.430	0.146	0.000***	1.493	0.433	0.139	0.001**
Carnegie Bacc.	-11.387	8.924	-0.042	0.203	-7.559	9.026	-0.028	0.403
Carnegie Doctoral	13.500	10.544	0.048	0.201	16.417	10.631	0.059	0.124
Private	23.484	8.742	0.092	0.008**	23.906	8.820	0.094	0.007**
Selective	73.879	9.057	0.292	0.000***	73.813	9.111	0.292	0.000***
More Selective	216.706	11.067	0.798	0.000***	213.988	11.095	0.788	0.000***
SLC					1.024	3.837	0.010	0.395
ACAP - Acquire					8.219	3.934	0.071	0.019*
ACAP - Assimilate					-1.805	3.345	-0.019	0.705
ACAP - Transform					0.770	4.105	0.007	0.426
ACAP - Exploit					2.477	3.764	0.024	0.256
R^2	.766				.773			
F	145.587***				86.909***			
F_{change}					1.882+			

*+p < .10; *p < .05; **p < .01; ***p < .001*

Notes: N = 320. Significance levels for control variables in both models reflect two-tailed tests. Significance levels for SLC and ACAP predictors reflect one-tailed tests, where positive coefficients correspond to the hypothesized relationship.

Regression Analysis: Undergraduate Non-White Enrollment Percentage

The base model was significant and accounted for 13.9% of the variance. The full model did not significantly add explanatory power. However, Strategic Learning Capability (SLC) behaviors had a positive relationship approaching significance ($p < 0.1$) with Undergraduate Non-White Enrollment Percentage, $\beta = .103$, $p = .05$ (one-tailed). Additional details appear in Table 19.

Table 19

Regression Analysis: Undergraduate Non-White Enrollment Percentage

	Base Model				Full Model			
	B	**SE**	**β**	**Sig.**	**B**	**SE**	**β**	**Sig.**
(Constant)	46.453	2.452		0.000***	42.685	5.712		0.000***
Endowment (1000s)	0.022	0.009	0.125	0.015*	0.022	0.009	0.125	0.016*
Enrollment (1000s)	0.036	0.123	0.019	0.770	0.018	0.124	0.010	0.883
Carnegie Bacc.	-4.811	2.294	-0.112	0.037*	-4.945	2.312	-0.115	0.033*
Carnegie Doctoral	9.013	2.921	0.189	0.002**	9.115	2.939	0.191	0.002**
Private	1.951	2.299	0.047	0.397	1.920	2.324	0.047	0.409
Selective	-14.949	2.274	-0.360	0.000***	-15.068	2.289	-0.363	0.000***
More Selective	-18.493	2.764	-0.414	0.000***	-18.812	2.767	-0.421	0.000***
SLC					1.616	0.980	0.103	0.050+
ACAP - Acquire					0.507	1.002	0.028	0.307
ACAP - Assimilate					1.098	0.877	0.072	0.106
ACAP - Transform					-0.611	1.075	-0.033	0.715
ACAP - Exploit					-1.584	0.992	-0.097	0.944
R^2	.139				.152			
F	9.723***				6.250***			
F_{change}					1.334			

*+p < .10; *p < .05; **p < .01; ***p < .001*

Notes: N = 431. Significance levels for control variables in both models reflect two-tailed tests. Significance levels for SLC and ACAP predictors reflect one-tailed tests, where positive coefficients correspond to the hypothesized relationship.

Respondent Perceptions of Absorptive Capacity's Impact on SEM Outcomes (RQ 3)

Research Question #3 investigated respondent perceptions of the impact of Absorptive Capacity (ACAP) capabilities on recruiting outcomes. Item set #18 asked, "How much do the following capabilities impact the ability of your office, department or organizational unit ("unit" below) to recruit students?" Participants selected one response related to the impact of each of the four dimensions of ACAP, rating the impact from "very little" (1) to "very much" (7). (See Survey Item Set #18, Appendix A.)

As shown in Table 20, the mean for responses did not vary substantially, with a range of means for the four items from 5.044 to 5.139. When segmented by title/role, however, differences in the mean for the entire set emerged with Dean/Director of Admissions having the highest mean scores (n = 96, M = 5.39). Individuals holding the Chief Academic Officer role had the lowest mean scores (n = 40, M = 4.37). Table 21 presents means and standard deviations disaggregated by respondent role.

There are multiple possible reasons why those holding the senior admissions role on campus may be more inclined to value ACAP behaviors and their potential impact on an institution's ability to meet its enrollment goals. First, admissions professionals have daily work that is more closely aligned with meeting specific enrollment targets than chief academic offers. Next, although provosts and vice presidents for academic affairs (on many campuses) have significant responsibilities for meeting strategic enrollment objectives, the different career paths traditionally taken by senior admissions officers and chief academic officers may also play a role in how these respondents value the management science aspect of strategic enrollment management. Senior admissions officers typically come from IHE professional staff ranks, with socialization that would include familiarity with enrollment management, strategy, and

administrative theories. Chief academic officers, who typically come from the faculty ranks, may place less value on administrative and management theories specific to higher education administration. Finally, this combination of daily work tasks and career path may compound so that, taken together, these two factors affect the perceived impact of ACAP between the two populations.

Table 20

Response Summary for Impact of ACAP Capabilities

	Mean	SD
Identifying relevant external information and resources.	5.12	1.259
Sharing relevant external information internally and with other units.	5.04	1.179
Utilizing relevant external information after it is learned by members	5.13	1.210
Innovating or adapting in response to external information.	5.13	1.286
Scale score (mean of responses to items above)	5.11	1.086

Notes: N=431. Participants responded on a scale from 1 (very little) to 7 (very much) to the item: "How much do the following capabilities impact the ability of your office, department or organizational unit ("unit" below) to recruit students?"

Table 21

Mean Responses to Impact of ACAP by Role/Title

	N	Mean	SD
Senior Enrollment Officer	152	5.23	1.018
Chief Academic Officer	40	4.37	.939
Chief Public Relations Officer	34	5.23	.803
Chief Student Life Officer	38	4.67	1.384
Dean/Director of Admissions	96	5.39	.922
Dean/Director of Financial Aid	63	5.12	1.179
Other	8	4.56	1.443

Notes: N=431. Table represents descriptive statistics presented using the least restricted sample.

Summary of Results

To respond to research questions 1 and 2, multivariate analysis explored all four dimensions of ACAP, as well as SLC, with one pair of regressions for each outcome variable. A brief overview of standardized beta weights with significance indicators appears in Table 22.

Table 22

Summary of Standardized Regression Coefficients for SLC and ACAP

Predictor	Applicants	Admit Rate (%)	Enrolled	Yield (%)	Mean SAT	Non-White (%)
SLC	.072*	-0.113*	--	--	--	.103+
ACAP-Acquire	.057+	--	.065**	--	.071*	--
ACAP-Assimilate	.063+	-0.161**	--	--	--	--
ACAP-Transform	--	--	--	--	--	--
ACAP-Exploit	--	--	.031+	.095+	--	--

*+p < .10; *p < .05; **p < .01; ***p < .001*
Note: Non-significant results suppressed.

Out of 30 possible relationships between Strategic Learning Capability (SLC), four types of Absorptive Capacity (ACAP), and the six outcome variables (number of applicants, admit rate, students enrolled, yield, mean SAT score, and undergraduate non-white percentage), five associations demonstrated statistical significance, and five associations approached statistical significance ($p < .1$).

The study's first hypothesis (H1) asserts that increased ACAP behaviors lead to improved performance on specific admissions and recruiting outcomes. ACAP Acquire behaviors were associated with statistically significant outcomes with both the number of students who enrolled ($p < .01$) and mean SAT score ($p < .05$), and approached significance with the number of applications ($p < .10$). ACAP Assimilate behaviors were associated with statistically significant outcomes with admit rate percentage ($p < .01$).

The second hypothesis (H2) asserts that increased SLC behaviors lead to improved performance on specific admissions and recruiting outcomes. Strategic Learning Capability (SLC) had a statistically significant relationship with the number of applicants to a particular institution ($p < .05$) as well as an association with admit rate percentage ($p < .01$).

Although there were several statistically significant relationships detected through the results presented in this chapter, the effects of ACAP and SLC behaviors on the dependent variables in this study are relatively modest. For example, with a 1-standard deviation (SD) increase of SLC behaviors within an institution, application counts rise only .072 SD. ACAP's Assimilate behaviors had the largest standardized Beta coefficient, showing a -0.161-SD decrease in admit rate for every 1-SD increase in ACAP Assimilate behaviors. These modest empirical relationships contrast with the perceived importance of ACAP behaviors. ACAP behaviors had a mean score of 5.39 out of 7.00 on a 1-7 scale, by Deans/Directors of Admissions describing the perceived impact of these behaviors.

Chapter Summary

This chapter opened with a restatement of the study research questions and sub-questions, as well as the data collection methods. The chapter then presented information on the composition of the data file. Descriptive statistics were presented about participants and the institutions at which they are employed. Results of an exploratory factor analysis and scale reliability analysis were presented, followed by: bivariate correlation of SLC, ACAP, and DVs; tests for normality of distribution; and assessment of multicollinearity.

The next section of the chapter presents regression results to explore Research Questions #1 and #2. RQ 1 focuses on the extent to which ACAP's dimensions are associated with higher performance on key indicators of SEM success. ACAP Acquire and Assimilate dimensions had

modest statistically significant associations (or associations that approached significance) with some of the outcome measures (DVs), but not all outcome measures. ACAP Transform had no statistically significant associations with SEM outcomes. ACAP Exploit had two associations that approached significance ($p < .1$).

RQ 2 explores the extent to which SLC behaviors were associated with higher performance on key outcomes. SLC had modest statistically significant associations with two outcomes, and an association that approached significance with one other. All of the statistically significant associations that were detected had only modest positive associations, and with a limited number of DVs for each predictor. However, the significant result is noteworthy, although modest, suggesting that increased SLC is associated with an increased number of applications, or decrease in admit rate, for a particular institution.

After the presentation of multivariate analysis results, information is presented on respondent perceptions of the impact of ACAP dimensions. RQ 3 sought to examine the extent to which ACAP dimensions are perceived to impact recruitment and enrollment outcomes. In contrast to the modest associations and limited statistically significant results identified in response to RQ 1 and 2, respondents overall perceived that each of the ACAP dimensions impacted outcomes (with a mean score greater than 5 on a 7-point scale, for each of the ACAP dimensions). Perceived impact was highest among Deans/Directors of Admission and Senior Enrollment Officers and lowest among Chief Academic Officers.

CHAPTER FIVE: DISCUSSION AND IMPLICATIONS

With attendance at four-year institutions remaining a desired pathway for many students, pressure and scrutiny on the industry of higher education continues (Bahr, 2009; Canterbury, 2000; Clemetsen, Furbeck, & Moore, 2014; NCES, 2013). Even as marketing, as a business function, has become a mainstay in colleges and universities, institutions still struggle to identify how their marketing functions, admissions offices, and other members of the strategic enrollment management (SEM) value chain all fit together. Hossler and Bontrager (2014) wrote that "SEM sits at the intersection of some of the most pressing public and institutional policy issues in the United States" (p. 585). Part of the pressure comes from the continuing and increased cost of college and the debt load with which students are graduating from institutions of higher education, with 68% of 2015 graduates holding student loans, and an average debt burden of $30,100 (Zamudio-Suarez, 2016; TICAS, 2016). In addition to pressures that come from the public at large, SEM leaders within colleges and universities face pressures from presidents and governing boards. Such pressures can include requests to increase net revenue, provide more access, engage in prestige-seeking activities to drive up rankings, and attract more students from out of state.

SEM leaders are faced with tough demands often at odds with each other; for example, a chief enrollment officer or financial aid director may be faced with the decision on whether to increase access through strengthening the need-based aid packages offered, or to increase the student academic profile for rankings and prestige purposes by enhancing merit award offerings. Alluding in 2013 to prior work on the subject, Hossler and Kalsbeek (2013) wrote that "a SEM perspective is necessary to help balance and manage the inevitable trade-offs between access and other institutional goals in the pursuit of prestige or net tuition revenue" (p. 2).

Competition takes many forms in higher education, with institutions competing with one another for a finite pool of prospective students to matriculate; there also is competition between institutional priorities. Institutional leaders also work to finely hone their "institution's particular and empirically demonstrable position within [the higher education marketplace]" (Kalsbeek, 2006, p. 8). Indeed, in certain professional schools within colleges and universities, business schools as an example, leaders note that "external signs of success or failure, approval or condemnation – signs such as the *BusinessWeek* rankings and the starting salaries of our students" have replaced internal signifiers of quality and success in some key measures of achievement (Khurana, 2007, p. 369). With many different forms of competition exacting pressure on enrollment management leaders, and a finite amount of attention that can be allocated, there is increased importance on identifying strategies and tactics that can be helpful within SEM, and communicating those strategies to leaders within the field (Ocasio, 1997). This study sought to do exactly that: make a contribution to practitioners of SEM, using an exploratory study of two business strategic management constructs and their potential impact in college and university admissions.

Review of Conceptual Framework

This study applied two strategic management frameworks that could inform SEM practices: absorptive capacity (ACAP) and strategic learning capability (SLC). Inasmuch as enrollment management functions, and especially admissions and higher education marketing, have seen rapid change in the last half-century, there also has been an increase in the infusion of strategic business practices into the operating domain of enrollment management. In fact, the activities of marketing institutions, managing their brands, admitting students from a back-office point of view, responding to customer service inquiries, and facilitating processes related to

institutional prestige have become deeply interconnected with each other as inextricably linked practices (Kalsbeek, 2006). On the consumer side, "students have more options and more access to greater amounts of information than ever before" (Kilgore & Gage, 2014, p. 432). IHEs, too, need the ability to leverage internal, integrated data stores for decision-making. Eisenhardt (1989) noted that fast decision-makers, in high-velocity environments, use "more, not less, information" compared to slower decision-makers (p. 543).

Although some information that serves strategic purposes will be housed within the SEM unit, and can be leveraged for competitive gain, knowledge exists in the external environment that can advance the strategic aims of a college or university. In addition to developing processes and routines, institutions also can develop capabilities. Winter (2000) distinguished a capability from simple processes and routines:

> *An organizational capability is a high-level routine (or collection of routines) that, together with its implementing input flows, confers upon an organization's management a set of decision options for producing significant outputs of a particular type.* (italics in original) (p. 983)

Absorptive Capacity

Absorptive capacity, as a capability, allows an organization to "*recognize* the value of new information, *assimilate* it, and *apply* it to commercial ends" [emphasis added] (Cohen & Levinthal, 1990, p. 128). Zahra and George (2002) offered a reformulated construct for absorptive capacity, with four embedded behaviors: acquire, assimilate, transform, and exploit (p. 186). In Zahra and George's (2002) reformulated construct, external information is not only acquired from external sources and assimilated into the organization, it is also transformed before being passed along to other personnel, units, or functions before being exploited or

leveraged for competitive advantage. Building on the work of Cohen and Levinthal as well as other scholars, Flatten, Engelen, Zahra, and Brettel (2011) introduced a set of scales to inventory ACAP behaviors in an organization. This study adapted those scales as part of the exploration of ACAP behaviors within IHEs to determine whether, as an organization-level capability, ACAP behaviors within organizations have a relationship with positive outcomes on key performance indicators for college recruitment and admissions.

Strategic Learning Capability

Strategic learning capability (SLC) describes an organization's proficiency at integrating knowledge from past strategic actions into future strategies and strategic decisions (Anderson, Covin, & Slevin, 2009). This definition builds on Pietersen's (2002) work that situates SLC within the context of a learning organization, or "an organization with an enhanced ability to generate, capture, and share knowledge" (p. 46). In particular, though, Anderson, Covin and Slevin's (2009) study focuses on "how *good* the firm is at generating strategic knowledge and how *good* the firm is at using that knowledge to improve its competitive position" (emphasis in original) (p. 219). In this study, an individual college or university constituted a "firm."

Outcomes in Higher Education Admissions

Institutions of higher education have a variety of goals and strategic objectives. In the admissions space, goals and objectives related to the characteristics of an incoming class, including the test scores of applicants or their racial/ethnic diversity mix, are more salient metrics for the goals of some IHEs than others. Outcome measures that were reviewed in this study included: total applications received; admit rate; number of students who enrolled; institution yield rate; percentage of non-White students at an institution (as a proxy for diversity); and mean SAT scores as a variable related to applicant quality. There are numerous other

measures of performance within institutions of higher education; these indicators were selected as they apply to a broad cross-section of institution types, and are frequently tied to goals within enrollment management units. In addition, the data were readily available to be utilized in this study.

Research Questions

This study explores how strategic activities, specifically absorptive capacity (ACAP) and strategic learning capability (SLC), increase effectiveness of SEM units and aligned areas (e.g., admissions, financial aid, and marketing) as reflected by the selected outcome measures. This study had one overarching question: *To what extent are ACAP and SLC behaviors associated with improved outcomes in recruitment and enrollment at four-year institutions?*

Within the scope of the overarching question above, the study specifically investigated the following research questions:

RQ 1. To what extent are ACAP behaviors associated with higher performance on key indicators of SEM success in recruitment and enrollment?

RQ 2. To what extent are SLC behaviors associated with higher performance on key indicators of success in recruitment and enrollment?

RQ 3. To what extent are ACAP behaviors perceived by higher education leaders to positively impact a given IHE's key outcomes in recruitment and enrollment?

Synthesis of Findings

In Chapter Four, complete details of findings are presented, with a summary of statistically significant findings related to RQ 1 and 2 presented in Table 22. Following the synthesis of findings from RQ 1 and 2, findings from RQ 3 are discussed. Findings from RQ 3

provide a platform for discussion of contrasts between empirical findings in RQ 1 and 2, and perception-related findings in RQ 3.

RQ 1 and 2: Noteworthy Results

Multivariate analysis explored all four dimensions of ACAP, as well as SLC, with regression models that controlled for SLC and the ACAP behaviors. Thus, the analyses constituted stringent tests of the unique effects of each ACAP behavior and SLC. For the SEM outcomes examined, four models showed a significant improvement in explanatory power with the addition of ACAP and SLC: number of applications received; admit rate percentage; number of students enrolled; and yield percentage rate.

Out of 30 possible relationships between SLC and the four ACAP dimensions with six different DVs, there were five statistically significant relationships ($p < .05$), and five relationships that approached conventional standards for statistical significance ($p < .1$). The five statistically significant associations, and those that approached conventional standards of significance, are detailed in this section. At the 5% level, one would expect fewer than two significant findings out of 30 solely due to Type I error.

Strategic Learning Capability (SLC) had a statistically significant relationship with the number of applicants to an institution, and the admit rate percentage, but not with other outcomes. This suggests that SLC behaviors may be of particular utility to institutions that seek to increase the total number of applications received through an organizational capability that allows informed, nimble responses to feedback that suggests failure or sub-optimal results for executed strategies. SLC also approached statistical significance ($p < .1$) with Undergraduate Non-White Percentage, suggesting possible positive outcomes from employing SLC behaviors at institutions wishing to increase the diversity of their student body.

ACAP Acquire, the dimension of Absorptive Capacity that is associated with identification and search behaviors, had a statistically significant relationship with: (1) the number of students who ultimately enrolled at institutions; and (2) the average SAT scores of first-year students at those institutions (a proxy for applicant quality). Practitioners can reasonably conclude that acquiring external information to share across SEM units within the institution may have a modest impact on enrollment and mean SAT scores. There is no evidence that ACAP Acquire contributes to other outcomes that are part of this study. Results suggest that ACAP Acquire, which approaches significance ($p < .1$), may also contribute to the total number of applicants.

ACAP Assimilate, the dimension of Absorptive Capacity that is associated with sharing external information within the organization and between organizational units, had a statistically significant, negative relationship with admit rate percentage (indeed, the strongest relationship found across the 30 relationships tested). Practitioners at institutions looking to become more selective as part of SEM goals may employ ACAP Assimilate behaviors as part of efforts to realize modest positive effects. Results suggest that ACAP Assimilate, which approaches significance ($p < .1$), may also contribute to the total number of applicants.

When viewing results that approached conventional statistical significance ($p < .1$, but not $p < .05$), there are additional associations that approach statistical significance and may contribute to the respective SEM outcomes indicated below:

- ACAP Acquire with total number of applicants
- ACAP Assimilate with total number of applicants
- ACAP Exploit with total number enrolled
- ACAP Exploit with yield rate percentage

RQ 3: Actual Effects vs. Perceived Impact of ACAP Behaviors

The ACAP dimensions showed mixed and generally modest relationships with the six SEM outcomes in the regression analyses conducted to address RQ #1. Responses to the ACAP impact perception item set, however, highlight a strong contrast between the actual relationship of specific ACAP behaviors with key performance outcomes and the perceived impact of those same behaviors. The mean response on a 1-7 scale for items associated with each of the four ACAP behaviors was no lower than 5.04 (see Table 20). When disaggregated by role/title, individuals who hold senior enrollment management and admissions roles rated the impact of these behaviors the highest (Senior Enrollment Officer mean = 5.23; Dean/Director of Admissions mean = 5.39) (see Table 21). These responses suggest a strong belief by practitioners that the behaviors matter, although there is only modest empirical evidence to suggest the behaviors affect the outcome measures in this study. This disjunction – between perceived value of the ACAP behaviors and the actual outcomes – is not only noteworthy, but is worth exploring in future research to determine more about the institutionalized value practitioners place on these behaviors, or if the behaviors lead to positive outcomes on indicators other than those examined in this study. Further exploration of this disparity also may help illuminate a conflict between empirical conclusions and conventional wisdom, such that the ACAP behaviors are perceived to have more value by practitioners (due to socialization or influences from new managerialism) than because of the actual potency of these strategic behaviors (Meyer & Rowan, 1977).

Key Implications and Insights

This dissertation study was a rigorous exploration of the association between two strategic management constructs – Absorptive Capacity (ACAP) and Strategic Learning Capability (SLC) – and six outcomes in the higher education admissions process. This section

identifies selected implications and takeaways for practitioners, as well as guidance on how members of the broader higher education and SEM communities can utilize the findings of this study to strengthen their work in practice. This study was designed with the practitioner and practical application in mind, but also affords broader insights related to the applicability of SLC and ACAP in higher education. Further, this section offers insights on the disparity between empirical effects of ACAP on SEM outcomes and the perceived impact of ACAP.

Regression Results: Modest But Robust

The results of the regressions for RQ #1 and #2 indicate that SLC and most ACAP behaviors have associations with specified outcomes. It is worth noting, however, that these associations were generally modest and showed different ACAP and SLC behaviors to matter for different outcomes. The paired regressions for each dependent variable included a base model and full model that added the four ACAP dimensions as well as SLC. This affords the identification of the unique impact of each of the five behaviors that were previously shown to be intercorrelated (see Table 12).

Modest Effects on Multiple Outcomes

In the conceptual framework of this study, there is an implicit question when discussing business practices and their possible positive effects in higher education: “Is higher education different?” In the preceding section, five statistically significant associations were reviewed. Taken together, these distributed positive effects merit further consideration, specifically to establish whether there are specific institutions (or groups of institutions) that may benefit more from the ACAP and SLC behaviors. In answering the question “Is higher education different?”, it is worth considering that individual institutions have different goals, and each IHE pursues specific aims at a particular point in time. For example, not every IHE is necessarily seeking to

improve its mean SAT score or become more selective, particularly those institutions with strong access missions. Individual IHEs may only be seeking to increase specific outcomes, and not necessarily all of the SEM outcomes highlighted in this study.

One implication of these findings is that institutional leaders should be careful to execute strategies and tactics that are specifically designed to address the problems they want to solve. For example, increasing ACAP Acquire behaviors in an SEM organization may predict improved performance in some outcomes, but not equally across all outcomes. A university seeking to increase its overall application count may utilize SLC behaviors while an institution seeking to increase the number of students who enroll may choose to optimize ACAP Acquire behaviors. Such efforts to increase behaviors associated with one predictor or another, though, come with costs (including satisficing on performance, or decreasing some strategic behaviors, in order to increase others).

Myths of Rational Behavior?: Why a Contrast Matters

In response to RQ 3, results indicated a fairly strong respondent belief in the impacts of ACAP behaviors on selected SEM outcomes, with the lowest-rated of the ACAP behaviors having a mean score of 5.04 on a 7-point scale in terms of impact to the unit's ability to achieve its SEM goals (see Table 20). When disaggregated by role, chief admissions officers and senior enrollment officers rated the impact of ACAP behaviors most highly. (Interestingly, chief public relations officers tied with senior enrollment officers.) Despite the high ratings offered by respondents, empirical results indicate that not all of the ACAP behaviors correspond to success on all outcomes, and the relationship that do exist are relatively modest. One explanation for this disjunction is that senior enrollment and admissions officers have adopted beliefs about perceived best practices in response to a field of practice characterized by uncertainty and

ambiguity. Meyer and Rowan (1977) observed that organizations often adopt "prevailing rationalized concepts of organizational work" which are "institutionalized in society" (p. 340). Adopting these concepts, they argue, allows organizations to "increase their legitimacy and their survival prospects, independent of the immediate efficacy of the acquired practices and procedures" (p. 340). This argument suggests that there is signaling value in merely adopting practices that are perceived to be effective, even if the practices are not strongly linked to desired outcomes. This adoption of practices may also become part of the organizational sagas of IHEs, becoming a component of how the personnel within an institution tell the story of their work on behalf of the college or university as part of a larger institutional narrative (Clark, 1972).

ACAP and SLC: Applicability in Higher Education

In designing this study, ACAP and SLC were considered not only strong conceptual underpinnings for exploration of the specific outcomes germane to the inquiry at hand, but were selected in part because of perceived broader applicability in enterprises, and perceived likelihood of applicability in higher education organizations. One noteworthy – and unexpected – insight from this study is that ACAP and SLC are potential predictors of positive outcomes for some goals and desired aims, but not all. These constructs appear to lack universal utility. Still, SLC behaviors may be particularly helpful for institutions looking to increase their number of applicants or reduce their admit rate. Certain ACAP behaviors may lead to increased numbers of applicants and enrolled students, higher mean SAT scores for an incoming class, or a lower admit rate.

ACAP behaviors did not appear to generate as many positive associations in the context of admissions and enrollment management when compared with ACAP-related outcomes in manufacturing (Liu & White, 1997), pharmaceutical and biotechnology firms (Lane & Lubatkin,

1998), or information technology (Boynton, Zmud, & Jacobs, 1994). In reviewing existing studies involving ACAP and crafting an updated definition for the construct, Zahra and George (2002) posited that "ACAP is viewed as a dynamic capability embedded in a firm's routines and processes, making it possible to analyze the stocks and flows of a firm's knowledge and relate these variables to the creation and sustainability of a competitive advantage" (p. 188). For the purposes of this study, the "firm" level of analysis would exist at the level of the individual institution of higher education. SEM functions have a number of daily responsibilities related to firm-level outcomes (e.g., net revenue, selectivity, diversity), The disjunction between the wide applicability of ACAP identified in Zahra and George's (2002) review of studies involving ACAP and this study may relate to a number of factors, including:

- A behavior-to-outcome disconnect: Even when SEM units perform ACAP behaviors, there is only a limited impact on overall institutional outcomes, because the SEM unit has only a finite amount of control over outcomes (discussed further below)
- An appraisal disconnect: SEM professionals, though they believe ACAP behaviors are important, are unable to fully appraise the degree to which these behaviors are occurring in their units
- A sector maturity issue in higher education: Integrated SEM units as a whole are relatively young, and the act of applying business-focused management strategies needs more time to have the same positive outcomes in enrollment management as it has in business.

SLC behaviors lead to positive outcomes in scenarios where firms also are investing in exploiting specific business opportunities (Sirén, Kohtamäki, & Kuckertz, 2012). A conceptualization challenge in this study is that organizations typically incorporate SLC

behaviors as part of an intentional strategy to improve certain organizational aspects. Thus, SLC is present more often in organizations seeking actively to improve themselves, or a specific aspect of the organization. Given the heterogeneity of institutional goals (and needs for improvement), SLC behaviors may be of more limited utility in this study due to the conceptualization that SLC behaviors are engaged to correct suboptimal performance (e.g., learning from events that have not worked well, or responding to tactics and strategy that lead to undesirable outcomes).

ACAP and SLC were explored as predictors specifically in the realm of admissions and recruitment, but they may have value in other functions within higher education. It is possible that the utility of ACAP and SLC may be greater for outcomes related to firm-level – or institution-level – strategies and not those specific to subunits such as admissions and recruitment. Further consideration of applicability, and research into outcomes in areas beyond admissions and recruitment, may (or may not) lead to additional positive outcomes that can be achieved in SEM units through increased SLC and ACAP behaviors, but such inquiry would provide information on the applicability of these constructs outside of admissions and recruitment .

A Constrained Sphere of Influence: Know What Can Be Controlled

With the notion in mind that strategic enrollment management leaders need to be strategic and intentional about which strategies they select, and which outcomes they hope to influence, another element of strategic enrollment management and admissions practice should be kept in mind: limits on the influence and control of enrollment management functional units or admissions offices. Enrollment management officials are often asked to pursue outcomes that may be in conflict, making achievement of the goals challenging. For example, an institution's

board of trustees may ask the enrollment management division to pursue an access-focused scholarship strategy with regard to one population (e.g., students from low-socioeconomic status backgrounds) while also seeking to increase net revenue. It may be difficult to achieve both goals if there are not sufficient numbers of full tuition-paying students to offset the scholarship initiative.

There are also some aspects of enrollment management over which the admissions unit, for example, has little control: changing populations and overall demographics, crises that affect the brand equity and reputation of a university, or changes in the labor market that may affect which career paths (and, consequently, academic fields and majors) students are pursuing. Additionally, some aspects of public perception and institutional reputation are challenging to change, or may only change over long periods of time. Specifically, public perception of institutions and their strengths may be grounded in long-running institutional narratives that withstand the test of time. Further, the locus of control for an institution's competitive position in the market does not exist singularly within one or two offices in the SEM function. According to one senior enrollment officer, "Addressing market position and prominence requires the integrated efforts of a wider array of functions than typically characterizes an EM organization […]" (Kurz & Scannell, 2006). Such efforts require intense coordination and effort across functions, and buy-in from across the campus.

Another example of factors beyond the control of the SEM unit is athletics performance, and its effect on applications for admission. Known as the "Flutie Effect," this phenomenon suggests that notable wins in the athletic arena lead to increased applications for admission (Silverthorne, 2013). In some instances, athletic success leads to increases in application numbers that are comparable to the gains made after lowered tuition rates or increases in faculty

quality (Chang, 2013). Enrollment management leaders and their teams need to be clear with senior campus leaders and stakeholders about forces that affect enrollment goals, but may be outside the sphere of influence of enrollment management leaders.

Future Research Possibilities

As a dissertation study, this manuscript represents the beginning, not the end, of a conversation about the role of ACAP and SLC within the context of SEM. Additional research in this area can help illuminate further empirical evidence of the relationship between these and other strategy constructs within SEM. In this section, two areas for potential future research are highlighted (in addition to the suggestion in the preceding section to explore the disconnect between actual and perceived impact of ACAP on admissions outcomes); these are not the only areas where further research may be beneficial, and – to persist with the metaphor of the conversation – others are welcome to contribute.

Analysis of SLC and ACAP impacts on different outcomes (DVs)

The six outcome variables included in this study represent common desirable admissions and enrollment outcomes, but are only six indicators out of dozens of possible indicators where SLC and ACAP may be impactful. Future research could take into account other outcome variables that could be analyzed as dependent variables. Analysis might reveal additional relationships between SLC and ACAP behaviors and the outcome variables. A first step may involve assessing which outcome variables may be most likely to be influenced by SLC and ACAP, including an assessment of whether predictors may have stronger effects in institutions with certain characteristics. For example, exploratory analysis could be conducted that focuses on specific institutional wealth characteristics (in a dataset in which cases are selected from a

specific institutional wealth segment), to determine if there is a relationship between ACAP/SLC and financial aid utilization within a specific institutional wealth segment. For this initial exploratory study, only six outcomes were evaluated, but further exploration may yield additional noteworthy outcomes that correlate with ACAP/SLC behaviors.

More in-depth research at individual IHEs

One future direction for this research would include more focused and in-depth data-gathering from sites that include college and university SEM units (including the offices of senior enrollment officers and admissions offices). As a quantitative study with participants from more than 400 institutions across a variety of control types (public and private), selectivity categories, and institutional size and wealth, there are limitations that are inherent in the design of this study. For example, the survey was carefully and intentionally crafted, and designed for participants to complete in 10-15 minutes. Response options were limited to quantitative indicators, most on 1-7 scales, and related to the constructs at hand. As part of the intentional execution of this study, there were no open-ended response options for participants. Thus, additional insights from SEM chiefs and admissions leaders within higher education can be particularly helpful. Future research may take the form of more in-depth surveys to SEM leaders related to the practices that underlie the ACAP and SLC constructs. Additional research may also be conducted on site, with researchers visiting colleges and universities in search of best practices in information-sharing, use of external knowledge, and systems for leveraging external knowledge for competitive advantage.

Beyond constraints resultant from survey design, the nature of the study itself – as a cross-sectional study, rather than one with before and after (or pre-/post-) analysis – presents an obstacle to fully telling the story of institutions that are working to improve specific outcome

measures. The present study design precludes examination of how implementing or increasing ACAP and SLC may influence or affect changes in SEM outcomes.

In addition to general between-institution heterogeneity on a variety of institutional characteristics, institutions may be pursuing substantially different SEM goals (even within groups of IHEs that are similar in control type, endowment level, or Carnegie Classification). One institution may be aggressively seeking to increase net revenue per student while another is focused on admitting students likely to persist or be retained by the institution. State performance funding and accountability frameworks may also prescribe targets that institutions are striving to reach, leading institutional actors to desire certain outcomes on specific measures dictated by public governing bodies or specific market forces (Burke, 2004). Future on-site research could incorporate institution-specific SEM goals as outcome variables, leading to research that explored ACAP and SLC and their potential influence on institution-specific goals.

Finally, on-site research could leverage qualitative interview methods to learn how individuals interpret and implement the ACAP and SLC behaviors. Such future research could explore how individuals execute ACAP and SLC behaviors in the context of their professional roles, as well as obtain multiple perspectives from individuals in a variety of roles in the IHEs, and help to reconcile differing perspectives across professionals who work in the same institution (or even in the same units within institutions).

Data-gathering from prospective students and their parents

Institutions often engage in prestige-seeking activities, as well as activities designed to influence their market positions (Brewer, Gates, & Goldman, 2002; Kalsbeek, 2006). Future research could incorporate the perspectives of prospective students and their parents, particularly about college choice decisions, institutional prestige, or even their awareness of individual

institutions, to determine if those institutions with higher or lower ACAP/SLC behaviors had higher or lower recognition among prospective students and their parents. Such a study would need to account for institutions with a national reputation versus institutions with more regional or local reputations, or could be limited to a group of IHEs with likely exposure among a variety of participants. (Alternatively, the sample could be structured to ensure regional variation and other demographic heterogeneity among participating students and their parents.) Such research may provide more information on the effects of ACAP and SLC and awareness of institutions in a given marketplace.

Additional Analyses within the Same Dataset

The dataset of collected survey responses in this study was robustly analyzed, with findings related to the goals of this study appearing in Chapter Four. However, additional analysis of the data may yield additional noteworthy insights. One potential avenue for future analysis with this dataset would be to focus on specific segments within subgroups of institutions. Within the Selectivity variable, for example, institutions of a specific Selectivity type may pursue specific goals. For example, IHEs in the "selective" category may be focused on prestige-seeking activities that would increase the number of applicants and reduce the admit rate, so that the institution can position itself as more desirable and exclusive.

Another avenue for additional analysis would be to account for varying enrollment goals by using the institutional goals item set (Item Set 12, Appendix A). This item set, although not analyzed for this study, asked participants to share their perception of their institution's goal attainment on a variety of goals, including efficiency of the recruitment process, headcount, and net revenue. In addition to simply taking these goals into account for analysis purposes,

additional analysis could incorporate longitudinal data, by utilizing IPEDS data from years preceding the outcomes in this study.

Finally, another approach to future research may take into account both longitudinal outcomes as well as efforts over time, surveying participants about the degree to which institutions have been seeking to change particular outcomes. Complications in this case would be the limitations of participants' ability to recall efforts over time, human tendencies toward retrospective sense making (Weick, Sutcliffe, & Obstfeld, 2005), and erosion of institutional memory resultant from staff turnover.

Conclusion

The purpose of this study was to determine the association between Absorptive Capacity (ACAP) and Strategic Learning Capability (SLC), and a series of outcomes related to strategic enrollment management (SEM) within institutions of higher education. The findings indicate that SLC and some of the dimensions of ACAP have an association with some SEM-relevant outcomes at institutions of higher education. The study invited participants representing a broad base of colleges and universities within the four-year sector of American higher education. Institutions whose employees were included in the study represent a variety of institution types (public and private), levels of wealth (as inferred from endowment per FTE student), sizes (as determined through enrollment headcount), regions of the country, and levels of institutional selectivity. This study is a small contribution to a much larger conversation about effectiveness and performance within the SEM community. This contribution on ACAP and SLC is, hopefully, one that inspires further dialogue and conversation, both about additional scholarship and applied

research ahead, as well as about information and knowledge external to institutions that can be leveraged by the professionals in their SEM units.

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APPENDIX A: SURVEY INSTRUMENT

Strategic Information in Enrollment Management

Q21 Welcome! Thank you for your interest in Exploring Strategic Information Use in Enrollment Management at Four-Year Institutions of Higher Education. This survey will take approximately 10 minutes to complete. You can review the Study Information Sheet on the next page, indicate your voluntary consent, and then click the "next page" arrow (>>) to proceed. For questions about the study, please contact Adam J. Herman, co-principal investigator, at (812) 727-0310 or ajherman@indiana.edu.

Q1 To begin the survey, please read the Study Information below, indicate your voluntary consent at bottom, and then click the "next page" arrow (>>) if you consent to proceed.

INDIANA UNIVERSITY STUDY INFORMATION SHEET FOR EXPLORING STRATEGIC INFORMATION USE IN ENROLLMENT MANAGEMENT AT FOUR-YEAR INSTITUTIONS OF HIGHER EDUCATION
(IRB STUDY #1601486820)

You are invited to participate in a research study of marketing and enrollment practices in higher education. You were selected as a possible subject because you hold a professional position in an institution of higher education. We ask that you read this page and ask any questions you may have before agreeing to be in the study.

The study is being conducted by Adam J. Herman, Co-Principal Investigator, under the supervision of Principal Investigator Alexander C. McCormick, Ph.D., at Indiana University Bloomington.

STUDY PURPOSE
The purpose of this study is to investigate the relationship between strategic enrollment management practices and outcomes in colleges and universities.

PROCEDURES FOR THE STUDY:
If you agree to be in the study, you will do the following things: Complete an online survey through the World Wide Web. You will complete the survey only once, for a duration of 10-15 minutes, from any location and device that is equipped with a Web browser and connected to the Internet.

RISKS AND BENEFITS
The risks of participating in this research are: You may be uncomfortable answering some of the interview questions. There is also a risk of loss of confidentiality. You are not expected to

benefit from participating in this research, beyond tangential benefits that may accrue as a result of contributing to research in the field of higher education.

CONFIDENTIALITY
Efforts will be made to keep your personal information confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. Your identity will be held in confidence in reports in which the study may be published, and databases in which results may be stored. Organizations that may inspect and/or copy your research records for quality assurance and data analysis include groups such as the study investigator and his/her research associates, the Indiana University Institutional Review Board or its designees, the study sponsor, and (as allowed by law) state or federal agencies, specifically the Office for Human Research Protections (OHRP), etc., who may need to access your research records.

PAYMENT
Participants may opt in to a drawing for one of five gift cards to Amazon.com in the amount of $50. This study seeks participation from 250 total participants. You have a 1 in 50 chance of winning the $50 gift card.

CONTACTS FOR QUESTIONS OR PROBLEMS
For questions about the study, contact the researcher Adam J. Herman at (812) 727-0310 or ajherman@indiana.edu.

For questions about your rights as a research participant or to discuss problems, complaints or concerns about a research study, or to obtain information, or offer input, contact the IU Human Subjects Office at (812) 856-4242 or (800) 696-2949.

VOLUNTARY NATURE OF STUDY
Taking part in this study is voluntary. You may choose not to take part or may leave the study at any time. Leaving the study will not result in any penalty or loss of benefits to which you are entitled. Your decision whether or not to participate in this study will not affect your current or future relations with Indiana University. This research is intended for individual 18 years of age or older. If you are under age 18, do not complete the survey. This research is for residents of the United States. If you are not a U.S. resident, do not complete the survey.

Q22 Do you consent to proceed with the survey?
- ❍ YES, I consent. Please proceed.
- ❍ NO, I do not consent.

Q3 CONFIDENTIAL INFORMATION: Your FIRST NAME, LAST NAME, E-MAIL ADDRESS, and INSTITUTION NAME will be used by the researchers only for study administration purposes, or to follow up with you about your participation in the study. Identifying information will not be shared in published research, or beyond the researchers involved in this study, except when required by law or practice as described in the Study Information Sheet.

Q4 Your first name

Q5 Your last name

Q6 Your e-mail address

Q7 Your college or university name

Q8 Please select the title that most closely matches the role you serve in your organization.

- ❍ Senior Enrollment Officer
- ❍ Dean or Director of Admissions
- ❍ Dean or Director, Student Financial Aid
- ❍ Chief Academic Officer
- ❍ Chief Student Life Officer
- ❍ Chief Public Relations Officer
- ❍ Other - Please specify _____

Q9 Please select the name of the office, department, or organizational unit that most closely matches yours.

- ❍ Enrollment Management
- ❍ Admissions / Recruitment
- ❍ Financial Aid / Scholarships
- ❍ Academic Affairs / Academic Advising
- ❍ VP Student Affairs / Dean of Students Office
- ❍ Marketing / Public Relations / Communications
- ❍ Advancement / Alumni Relations
- ❍ Student Services - Other

Q10 How much knowledge do you have about your institution's enrollment management activities (e.g., admissions, student recruitment, marketing, etc.)?

- ❍ (very little) 1
- ❍ 2
- ❍ 3
- ❍ 4
- ❍ 5
- ❍ 6
- ❍ 7 (very much)

Q11 How many years of experience do you have in working with enrollment management, admissions, or marketing activities in higher education?

- ❍ No experience with these activities
- ❍ Less than 3 years of experience
- ❍ 3 - 6 years of experience
- ❍ 7 - 9 years of experience
- ❍ 10 or more years of experience

Q12 We are interested in your institution's success in achieving its goals. With the most recent academic year in mind, how much do you believe your institution achieved its goals in each of the following areas?

	(Very Little) 1	2	3	4	5	6	7 (Very Much)
Overall enrollment goals	❍	❍	❍	❍	❍	❍	❍
Selectivity for admission to the institution	❍	❍	❍	❍	❍	❍	❍
Diversity of students who applied to the institution	❍	❍	❍	❍	❍	❍	❍
Efficiency of recruitment and admissions processes	❍	❍	❍	❍	❍	❍	❍
Headcount / full-time enrolled (FTE) student goals	❍	❍	❍	❍	❍	❍	❍
Net revenue goals	❍	❍	❍	❍	❍	❍	❍

Q13 We would like to learn more about your perceptions of your institution's strategic activities. Please indicate your agreement or disagreement with the statements below, related to your institution.

	(Strongly Disagree) 1	2	3	4	5	6	7 (Strongly Agree)
My institution is good at identifying student recruitment strategies/activities that haven't worked.	❍	❍	❍	❍	❍	❍	❍
My institution is good at pinpointing why failed student recruitment strategies/activities haven't worked.	❍	❍	❍	❍	❍	❍	❍
My institution is good at learning from its mistakes with student recruitment strategies/activities.	❍	❍	❍	❍	❍	❍	❍
My institution regularly modifies its choice of student recruitment strategies/activities as we see what works and what doesn't.	❍	❍	❍	❍	❍	❍	❍
My institution is good at changing student recruitment strategies/activities midstream as we get a sense of the likely effectiveness of our actions.	❍	❍	❍	❍	❍	❍	❍
My institution is good at recognizing alternative approaches to achieving our student recruitment objectives when it becomes clear that the initial approach won't work.	❍	❍	❍	❍	❍	❍	❍

Q14 We are interested in the use of external resources (e.g., personal networks, consultants, seminars, internet, databases, professional journals, academic publications, market research, regulations, and laws) to obtain information. How much does your office, department, or organizational unit ("unit" below) engage in the following behaviors?

	(Very Little) 1	2	3	4	5	6	7 (Very Much)
Searching for relevant information concerning higher education to accomplish day-to-day tasks in our unit.	❍	❍	❍	❍	❍	❍	❍
Exchanging information and experience with other colleges and universities.	❍	❍	❍	❍	❍	❍	❍
Using information sources within the higher education sector to accomplish our unit's work.	❍	❍	❍	❍	❍	❍	❍
Using information from outside the higher education sector to accomplish our unit's work.	❍	❍	❍	❍	❍	❍	❍

Q15 We are interested in communication between offices, departments, and organizational units ("unit" below) at your institution. How much do the following activities occur at your institution?

	(Very Little) 1	2	3	4	5	6	7 (Very Much)
Ideas and concepts are communicated across units.	❍	❍	❍	❍	❍	❍	❍
Cross-unit support is provided to support collaborative problem-solving.	❍	❍	❍	❍	❍	❍	❍
Relevant information is communicated freely from one unit to other relevant units.	❍	❍	❍	❍	❍	❍	❍
Periodic cross-departmental or cross-unit meetings are held to discuss new developments, problems, and achievements.	❍	❍	❍	❍	❍	❍	❍

Q16 We are interested in how information is utilized within your office, department or organizational unit. How much does your office, department, or organizational unit ("unit" below) engage in the following behaviors?

	(Very Little) 1	2	3	4	5	6	7 (Very Much)
Using information collected by members of the unit.	❍	❍	❍	❍	❍	❍	❍
Preparing absorbed information to make it available and usable in support of unit goals.	❍	❍	❍	❍	❍	❍	❍
Linking existing information with new insights and information.	❍	❍	❍	❍	❍	❍	❍
Applying new information in support of the unit's work.	❍	❍	❍	❍	❍	❍	❍

Q17 We would like to know more about activities at your institution as a whole. How much are the following behaviors practiced within your institution?

	(Very Little) 1	2	3	4	5	6	7 (Very Much)
Developing new ways of serving constituents.	❍	❍	❍	❍	❍	❍	❍
Engaging in purposeful innovation or experimentation to better serve constituents.	❍	❍	❍	❍	❍	❍	❍
Adapting technologies, practices, and ways of doing business specifically in response to new knowledge gained.	❍	❍	❍	❍	❍	❍	❍
Working more effectively by adopting new technologies, practices and ways of doing business.	❍	❍	❍	❍	❍	❍	❍

Q18 How much do the following capabilities impact the ability of your office, department or organizational unit ("unit" below) to recruit students?

	(Very Little) 1	2	3	4	5	6	7 (Very Much)
Identifying relevant external information and resources.	❍	❍	❍	❍	❍	❍	❍
Sharing relevant external information internally and with other units.	❍	❍	❍	❍	❍	❍	❍
Utilizing relevant external information after it is learned by members of our unit.	❍	❍	❍	❍	❍	❍	❍
Innovating or adapting in response to external information.	❍	❍	❍	❍	❍	❍	❍

Q19 Five respondents will be entered into a drawing for a $50 Amazon.com gift card. To enter the drawing, please enter below the e-mail address at which you would like to be contacted. If you do not enter an e-mail address (or if you remove the pre-populated entry from the field below), you will not be entered into the drawing.

Q20 E-mail address to contact if you are selected to receive the gift card

END SURVEY INSTRUMENT

APPENDIX B: STUDY INFORMATION SHEET

IRB STUDY #1601486820

INDIANA UNIVERSITY STUDY INFORMATION SHEET FOR

EXPLORING STRATEGIC INFORMATION USE IN ENROLLMENT MANAGEMENT

AT FOUR-YEAR INSTITUTIONS OF HIGHER EDUCATION

You are invited to participate in a research study of marketing and enrollment practices in higher education. You were selected as a possible subject because you hold a professional position in an institution of higher education. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

The study is being conducted by **Adam J. Herman, Co-Principal Investigator, under the supervision of Principal Investigator Alexander C. McCormick, Ph.D., at Indiana University Bloomington**.

STUDY PURPOSE

The purpose of this study is to investigate the relationship between strategic enrollment management practices and outcomes in colleges and universities.

PROCEDURES FOR THE STUDY:

If you agree to be in the study, you will do the following things:
Complete an online survey through the World Wide Web. You will complete the survey only once, for a duration of 10-15 minutes, from any location and device that is equipped with a Web browser and connected to the Internet.

RISKS AND BENEFITS

The risks of participating in this research are: You may be uncomfortable answering some of the interview questions.

There is also a risk of loss of confidentiality.

You are not expected to benefit from participating in this research, beyond tangential benefits that may accrue as a result of contributing to research in the field of higher education.

CONFIDENTIALITY

Efforts will be made to keep your personal information confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. Your identity will be held in confidence in reports in which the study may be published, and databases in which results may be stored.

Organizations that may inspect and/or copy your research records for quality assurance and data analysis include groups such as the study investigator and his/her research associates, the Indiana University Institutional Review Board or its designees, the study sponsor, and (as allowed by law) state or federal agencies, specifically the Office for Human Research Protections (OHRP), etc., who may need to access your research records.

PAYMENT

Participants may opt in to a drawing for one of five gift cards to Amazon.com in the amount of $50. This study seeks participation from 250 total participants. You have a 1 in 50 chance of winning the $50 gift card.

CONTACTS FOR QUESTIONS OR PROBLEMS

For questions about the study, contact the researcher Adam J. Herman at (812) 727-0310 or ajherman@indiana.edu.

For questions about your rights as a research participant or to discuss problems, complaints or concerns about a research study, or to obtain information, or offer input, contact the IU Human Subjects Office at (812) 856-4242 or (800) 696-2949.

VOLUNTARY NATURE OF STUDY

Taking part in this study is voluntary. You may choose not to take part or may leave the study at any time. Leaving the study will not result in any penalty or loss of benefits to which you are entitled. Your decision whether or not to

participate in this study will not affect your current or future relations with Indiana University.

This research is intended for individual 18 years of age or older. If you are under age 18, do not complete the survey.

This research is for residents of the United States. If you are not a U.S. resident, do not complete the survey.

APPENDIX C: FIRST INVITATION TO PARTICIPATE (RECRUITMENT COMMUNICATION)

INVITATION TO PARTICIPANTS

Dear [First Name] [Last Name],

You have been selected as a potential participant in a survey-based study: **Exploring Strategic Information Use in Enrollment Management at Four-Year Institutions of Higher Education.**

Completion of this survey is voluntary, and is expected to take 10-15 minutes. Participants may opt in to a **drawing for one of five Amazon.com gift cards in the amount of $50**. This study seeks 250 total participants.

You may complete the survey, and review additional information on this study, online:
Click Here to Complete the Survey [hyperlinked]

Or copy and paste the URL below into your internet browser:
[URL]

The Indiana University Human Subjects Office has approved this research (Study #1601486820), which is conducted under the guidance of a committee chaired by Dr. Alexander C. McCormick, Associate Professor of Educational Leadership and Policy Studies, at Indiana University.

Thank you in advance for your participation.

Sincerely,

Adam J. Herman
Doctoral Candidate, Higher Education Administration
Indiana University Bloomington
ajherman@indiana.edu | (812) 727-0310

To REMOVE yourself from the participant invitation list, please opt out at this link:
Click here to unsubscribe [hyperlinked]

Sender: Adam Herman, P.O. Box 5842, Bloomington, IN 47407-5842
EDR [HED institution number] // [Institution Name] [IPEDS Unit ID]

APPENDIX D: SECOND INVITATION TO PARTICIPATE (RECRUITMENT COMMUNICATION WITH ENDORSEMENT)

Dear [First Name] [Last Name],

This is a reminder that you have been selected as a potential participant in a survey-based study: **Exploring Strategic Information Use in Enrollment Management at Four-Year Institutions of Higher Education.**

Completion of this survey is voluntary, and is expected to take 10-15 minutes. Participants may opt in to a **drawing for one of five Amazon.com gift cards in the amount of $50**. This study seeks 250 total participants.

You may complete the survey, and review additional information on this study, online:
Click Here to Complete the Survey [hyperlinked]

Or copy and paste the URL below into your internet browser:
[URL]

This study has been endorsed by the Center for Enrollment Research, Policy, and Practice at the University of Southern California. [View Endorsement Letter - PDF]

The Indiana University Human Subjects Office has approved this research (Study #1601486820), which is conducted under the guidance of a committee chaired by Dr. Alexander C. McCormick, Associate Professor of Educational Leadership and Policy Studies, at Indiana University.

Thank you in advance for your participation.

Sincerely,

Adam J. Herman
Doctoral Candidate, Higher Education Administration
Indiana University Bloomington
ajherman@indiana.edu | (812) 727-0310

To REMOVE yourself from the participant invitation list, please opt out at this link:
Click here to unsubscribe [hyperlinked]

Sender: Adam Herman, P.O. Box 5842, Bloomington, IN 47407-5842
EDR [HED institution number] // [Institution Name] [IPEDS Unit ID]

APPENDIX E: LETTER OF ENDORSEMENT

USC Rossier
School of Education

CENTER FOR ENROLLMENT RESEARCH, POLICY, AND PRACTICE
Jerome A. Lucido, Ph.D.
Executive Director

Emily Chung, Ed.D.
Program Director

July 25, 2016

Dear Colleagues,

As you know, one of the primary missions of The Center for Enrollment Research, Policy, and Practice at the University of Southern California is to promote research relevant to enrollment managers. In this vein we are pleased to endorse the study Strategic Information Use in Enrollment Management at Four-Year Institutions of Higher Education.

Co-Principal Investigator Adam Herman, a doctoral candidate at Indiana University, is conducting research that examines the impact that strategic action and organizational learning have on student recruitment. Specifically, the study seeks to illuminate promising practices that correlate with goal attainment in several key measures: yield, applicant mix, total applications received, and other indicators of success relevant to enrollment management.

With increased pressure and new challenges from constituents both internal and external to our institutions, this study's aim ultimately is to produce usable insights on strategic information use and organizational learning that will benefit our field and highlight best practices. For these reasons we are endorsing this study and we encourage you to participate in the survey that Adam has developed. All participants may request a copy of the study at its conclusion.

If you have questions related to the survey or are having problems with the link to the survey please contact Adam Herman at ajherman@indiana.edu or (812) 727-0310.

Thank you in advance for investing 10-15 minutes in completing this short survey, and sharing your insights.

Sincerely,

Jerry Lucido
Professor of Research and Executive Director
Center for Enrollment Research, Policy, and Practice

Don Hossler
Senior Scholar
Center for Enrollment Research, Policy, and Practice

Associate Dean for Strategic Enrollment Services
USC Rossier School of Education

USC Rossier School of Education

University of Southern California
1150 S. Olive St, Ste 2100, Los Angeles, CA 90015 • Tel: 213 740 7401 • Fax: 213 821 3424

APPENDIX F: IRB EXEMPTION NOTIFICATION/APPROVAL

INDIANA UNIVERSITY
OFFICE OF THE VICE PRESIDENT FOR RESEARCH
Office of Research Compliance

To: Alexander McCormick
EDUCATION

Adam Herman
EDUCATION

From:

Human Subjects Office
Office of Research Compliance – Indiana University

Date: July 12, 2016

RE: **NOTICE OF EXEMPTION - AMENDMENT**

Protocol Title: EXPLORING STRATEGIC INFORMATION USE IN ENROLLMENT MANAGEMENT AT FOUR-YEAR INSTITUTIONS OF HIGHER EDUCATION

Study #: 1601486820A003

Funding Agency/Sponsor: None

Status: Exemption Granted | Exempt

Study Approval Date: July 12, 2016

The Indiana University Institutional Review Board (IRB) EXE000001 | Exempt recently reviewed the above-referenced protocol. In compliance with (as applicable) 45 CFR 46.109 (d) and the IU Standard Operating Procedures (SOPs) for Research Involving Human Subjects, this letter serves as written notification of exempt determination.

Under 45 CFR 46.101(b) or the SOPs, as applicable, the amendment is accepted as Exempt (2) Category 2: Surveys/Interviews/Standardized Educational Tests/Observation of Public BehaviorResearch involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior if: i) information obtained is recorded in such a manner that human subjects cannot be identified, directly or through identifiers linked to the subjects; or ii) any disclosure of the human subjects responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects financial standing, employability or reputation, with the following determinations:

Acceptance of this amendment is based on your agreement to abide by the policies and procedures of the Indiana University Human Research Protection Program and does not replace any other approvals that may be required. Relevant policies and procedures governing Human Subjects Research can be found at: http://researchcompliance.iu.edu/hso/hs_guidance.html.

The Exempt determination is valid indefinitely. Substantive changes to approved exempt research must be requested and approved prior to their initiation. Investigators may request proposed changes by submitting an amendment through the KC IRB system. The changes are reviewed to ensure that they do not affect the exempt status of the research. Please check with the Human Subjects Office to determine if any additional review may be needed.

You should retain a copy of this letter and all associated approved study documents for your records. Please refer to the assigned study number and exact study title in future correspondence with our office. Additional information is available on our website at http://researchcompliance.iu.edu/hso/index.html.

If your source of funding changes, you must submit an amendment to update your study documents immediately.

If you have any questions or require further information, please contact the Human Subjects Office via email at irb@iu.edu or by phone at 317-274-8289 (Indianapolis) or 812-856-4242 (Bloomington).

You are invited, as part of ORA's ongoing program of quality improvement, to **participate in a short survey** to assess your experience and satisfaction with the IRB related to this approval. We estimate it will take you approximately **5 minutes to complete the survey.** The survey is housed on a Microsoft SharePoint secure site that requires CAS authentication. This survey is being administered by REEP; please contact us at reep@iu.edu if you have any questions or require additional information. Simply click on the link below, or copy and paste the entire URL into your browser to access the survey: https://www.sharepoint.iu.edu/sites/iu-ora/survey/Lists/Compliance/IRB_Survey/NewForm.aspx.

/enclosures

APPENDIX G: EXPLORATORY FACTOR ANALYSIS – FACTOR LOADINGS

	Factor					
	SLC	ACAP - Assimilate	ACAP - Exploit	ACAP - Integrated Perception	ACAP - Transform	ACAP - Acquire
	1	2	3	4	5	6
Strategic Learning Capability						
Good at identifying strategies that haven't worked	0.82					
Good at pinpointing failure	0.79					
Good at learning from mistakes	0.78					
Regularly modifies strategies/activities	0.78					
Good at changing strategies midstream	0.79					
Good at recognizing alternative approaches	0.76					
ACAP - Assimilate						
Ideas and concepts communicate across units		0.84				
Cross-unit support toward problem-solving		0.83				
Information communicated freely to other units		0.84				
Periodic cross-dept. and cross-unit meetings		0.81				

	Factor					
	SLC	ACAP - Assimilate	ACAP - Exploit	ACAP - Integrated Perception	ACAP - Transform	ACAP - Acquire
	1	2	3	4	5	6
ACAP - Exploit						
Develop new ways of serving constituents			0.75			
Purposeful innovation to better serve constituents			0.78			
Adapt technologies and practices			0.84			
Work more effectively by adopting technologies			0.82			
ACAP - Perception/Integrated						
Identify and acquire relevant external information				0.79		
Share relevant external information				0.81		
Utilize relevant information				0.85		
Innovate or adapt in response to external information				0.80		
ACAP - Transform						
Use information collected by members of unit					0.77	
Prepare absorbed information to make it usable					0.81	
Linking existing information with new insights					0.81	
Applying new information in support of unit work					0.81	
ACAP - Acquire						
Search for relevant information for day-to-day tasks						0.80
Exchange information with other IHEs						0.72
Use information sources within higher education						0.76
Use information from outside higher education						0.66

ADAM J. HERMAN
CURRICULUM VITAE

Education

Indiana University	**Ed.D., Higher Education** Minor field: Strategic Management & Organizational Theory	**August 2017**
Eastern Michigan Univ.	**M.A., Educational Leadership**	**May 2006**
Brandeis University	**B.A., American Studies** Minor field: Journalism	**May 2004**

Appointments in Higher Education

Indiana University Bloomington – Kelley School of Business
Kelley Direct MBA & M.S. Programs

- Director of Admissions & Student Services (October 2016 – present)

Kelley Undergraduate Programs

- Director, Kelley Living Learning Center (October 2013 – October 2016)
- Associate Director, Kelley Living Learning Center (June 2012 – October 2013)
- Course Coordinator and Instructional Coach, Kelley Living Learning Center (May 2011 – June 2012)

Communication, Professional, and Computer Skills Faculty

- Visiting Lecturer in Business Communication (August 2009 – May 2011)

Wayne State University (Detroit)
Irvin D. Reid Honors College

- Senior Communications Officer (August 2008 – July 2009)
- Marketing Coordinator (October 2007 – August 2008)

Office of Undergraduate Admissions

- Admissions Counselor (September 2006 – October 2007)

Eastern Michigan University (Ypsilanti)
Office of Campus Life

- Graduate Assistant for Student Activities (August 2004 – May 2006)

University of Michigan (Ann Arbor)
Office of Student Activities and Leadership

- Graduate Intern (January 2006 – May 2006)

Teaching

Eastern Michigan University
College of Education, Master's Program in Educational Leadership

- Enrollment Management - Winter 2016; Winter 2017

Indiana University Bloomington
Kelley School of Business, Undergraduate Program

- Business Presentations – Fall 2009; Fall 2010; Spring 2012; Spring 2015
- Business Communication – Spring 2010; Spring 2011
- When Crisis Strikes: Strategic Communication During a Crisis – Spring 2011

Engagement and Service

Indiana University Bloomington
Kelley School of Business

- Trip Leader, Business and Human Rights in South Africa - Short-Term Study Abroad (2015, 2016)
- Student Organization Advisor, Kelley Professionalism Organization (2010 – 2014)
- Residential Fellow, Kelley Living Learning Center (2010 – 2011)
- Student Organization Advisor, Kelley DECA (2010 – 2011)
- Search committee member for Business Communication faculty (2010)

Service to Division of Student Affairs (Campus-wide service)

- Standards Evaluator, Greek Assessment and Awards Program (2011, 2015)
- MyInvolvement (Online Student Engagement Portal) Marketing Committee (2010 – 2011)
- Consultant, Division of Student Affairs Strategic Plan (2010 – 2011)

University of Colorado – Boulder (Leeds School of Business)

- External Consultant and Program Evaluator, Leeds Residential Academic Program (Spring 2014)

Publication

Herman, A. J. (2014). Strategic thinking enrollment organizations. In D. Hossler, & R. Bontrager (Eds.) *The handbook of strategic enrollment management.* (pp. 490-507). San Francisco, CA: Jossey-Bass.

Selected Presentations

Herman, A. J. & Mumma, S. M. (2015, Oct. 18). *Effective Partnerships: Strategies to Engage Campus, Alumni, and Corporate Partners in Your Program*. Presentation delivered at the ACUHO-I Living Learning Programs Conference, St. Pete Beach, FL.

Herman, A. J. (2015, July 15) *Strategic Thinking Enrollment Organizations.* Presentation delivered within full-day pre-conference workshop: *Building Capacity for Strategic Enrollment Management: The Core Competencies of Enrollment Management.* Presentation delivered at 30th annual ACT Enrollment Planners Conference, *Chicago*, IL. (Invited presenter.)

Gowin, M. D., **Herman, A. J.,** Namy, J. L., & Vargo, S. S. (2012, Oct. 12). *Collaboration Beyond the Classroom: Building a Successful Academic-Residential Partnership*. Presentation delivered at ACUHO-I Living Learning Programs Conference, Albuquerque, NM.

Herman, A. J. (2011, Jan. 6). *Students First: Leveraging Your Student Affairs Skills and Mindset From Any Position in the College/University Environment.* Presentation delivered at the Indiana University Residential Life Training Conference, Bloomington, IN.

Clark, P. R., **Herman, A. J.,** Mora, J. M., & New, D. E. (2010, Oct. 28). *Professionalism, Credibility, and Your Personal Brand: Essential Communication Competencies to Highlight in Your Classroom.* Presentation Delivered at the Association for Business Communication Annual Conference, Chicago, IL.